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## ABSTRACT

Reading is a process in which written language conveys meaning between writer and reader. The reader uses graphic, syntactic, and semantic cues to get to the meaning. This study examines the reading process of 94 subjects with proficiency levels ranging from low second grade to high tenth grade using the Goodman Taxonomy of Reading Miscues. The analysis showed reading at all levels to be consistent with the Goodman model of reading. Low proficiency readers are using the same process as high proficiency readers but less well. They are less efficient because they use more graphic, syntactic, and semantic information than they need; they have less productive strategies for using this information; and they lose more of the potential meaning. The analysis revealed no hierarchy of skills in reading development. Beyond the very lowest levels, no notable differences in handling graphic cues exist. Differences in ability to handle complex syntax disappear among readers of moderate to high proficiency. The single consistent difference between groups at successive proficiency levels is in their ability to comprehend what they read. The best indicator of reading proficiency is the percent of miscues semantically acceptable before correction. (Author/TO)

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<u>Location</u>	<u>Should read:</u>
pg. 16, paragraph 3, line 3	or the first...
pg. 17, paragraph 5, line 1	stored on tape...
pg. 40, paragraph title	some conclusions...
pg. 49, insert after table 3-31:	
<p>High groups overlap average groups. Higher grades tend toward higher means. For 8H and 10H groups, syntactic acceptability is quite similar for stories 60 and 61 but semantic acceptability is notably lower on story 61.</p>	
pg. 50, paragraph 1, line 2	research, we...
pg. 108, paragraph 1, line 3	feature is <u>known</u>
pg. 112, paragraph 7, line 5	<u>and 2LA, 2HA, and 4A</u>
pg. 141, paragraph 1, line 1	<u>a noun modifier</u>
pg. 157, paragraph 2, line 1	<u>made by readers</u>
pg. 184, paragraph 1, line 5	<u>strives to recreate...</u>
pg. 185, paragraph 2 line 5	<u>hypothesized</u>
pg. 186, Figure 4-9, change 3 to 1 and 1 to 3	
pg. 187, paragraph 3, line 1, circle was	
pg. 187, paragraph 3, line 3, mark <u>was</u> above <u>stood</u>	
pg. 192, paragraph 6, lines 1-3	omit all words after <u>displays the</u> (line 1) and <u>before frequency of</u> (line 3)
pg. 192, paragraph 6, lines 3-4	omit <u>in the bottom half</u>
pg. 204, paragraph 6, line 6	omit <u>§</u>
pg. 213, paragraph 4, line 2	so <u>by</u> substituting
pg. 225, line 16	up <u>from</u> her
pg. 242, paragraph 7, line 5	left <u>out</u> of
pg. 248, last line	<u>a</u> is substituted for the <u>in the example</u> (not cut)
pg. 253, paragraph 3, line 4	<u>6A - 1.07</u>
pg. 256, paragraph 3, line 6	<u>uncorrected</u>
pg. 261, paragraph 3, line 5	<u>6A group</u>
pg. 271, paragraph 5, line 3	<u>6H, 1.78</u>



## ABSTRACT

Title of Project: Theoretically Based Studies of  
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Reading is a process in which written language conveys meaning between writer and reader. The reader uses graphic, syntactic, and semantic cues to get to the meaning. This study examines the reading process at proficiency levels ranging from low proficiency second grade to high proficiency tenth grade. The miscues of each subject are analysed according to The Goodman Taxonomy.

The analysis showed reading at all levels to be consistent with the Goodman model of reading. Low proficiency readers are using the same process as high proficiency readers but less well. They are less efficient because they use more graphic, syntactic, and semantic information than they need, they have less productive strategies for using this information, and they are less effective because they lose more of the potential meaning.

The analysis revealed no hierarchy of skills in reading development. Beyond the very lowest levels, there are no notable differences in handling graphic cues. Differences in ability to handle complex syntax disappears among readers of moderate to high proficiency. The single consistent difference between groups at successive levels of proficiency is in their ability to comprehend what they read. The single best indicator of reading proficiency is the percent of miscues semantically acceptable before correction.

FINAL REPORT

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THEORETICALLY BASED STUDIES OF PATTERNS OF  
MISCUES IN ORAL READING PERFORMANCE

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April, 1973

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## CHAPTER I

### INTRODUCTION: READING PROCESS AND THEORY

This three year study of oral reading miscues is a continuation of almost ten years of research which has sought to build a theoretical understanding of the reading process by comparing the unexpected observed responses of readers to their expected responses.

Early in the ten year span we became aware that reading is not the accurate process it has often been assumed to be and that even effective readers make miscues, unexpected responses, when they encounter unfamiliar written language. A key assumption in the research has been that these miscues are generated by the reader in the same way that expected responses are and with use of the same information. They are miscues in the sense that the reader, in the process of reading, makes a deviation from the path that would lead to the expected response. By analyzing the ways that ER (expected response) and OR (observed response) are different, we have been able to see the process at work, and to create a model of that process.

In the three year USOE funded study which we report here, it has been possible to look at readers who range from low proficiency second graders to high proficiency tenth graders. Using and modifying the descriptive taxonomy which has grown out of earlier research, we have produced in this study a base-line description of the reading process over a relatively full range of users. Because our approach involves looking in depth at readers at work on real texts, not specially prepared for research purposes, we are able to say, "This is what readers really do." Because our groups at each proficiency level are small, five or six subjects, we cannot say, "This is what all readers do." But the depth of our analysis and the theory and model with which it interacts make it possible for us to make strong inferences from our research about what must be essentially universal about the reading process and what the parameters are within which readers must operate.

#### Reading as a Psycholinguistic Process

Prior to the inception of this project, the researcher had stated a theoretical view in which reading is seen as a psycholinguistic process, one in which the reader functions as a user of language. Readers seek actively to reconstruct from a

graphic display a message which the writer has encoded. In this process, the reader draws on his preexisting linguistic competence and brings his experiential and conceptual development to bear on the task.

He samples from graphophonic information, syntactic information, and semantic information as he interacts with material he is reading (Goodman, 1967). The goal is always some degree of comprehension (here defined as constructing a message).

A tentative model of the reading process had been developed by the principal investigator on the basis of this psycholinguistic theory. Figure 1-1 shows a flow chart based on this model originally constructed by Gephart for the report of The Reading Convergence Technique Planning Committee (Gephart, 1969).

The model assumes, on the base of past studies, that reading is not a precise process of letter or word recognition but is in fact a process in which prediction, selection, and sampling of cues, and subsequent testing by syntactic and semantic screens occur. In this process, a proficient reader is one who uses the least amount of available information to make the best possible (and hence, the most effective) predictions. Reading involves strategies more than skills.

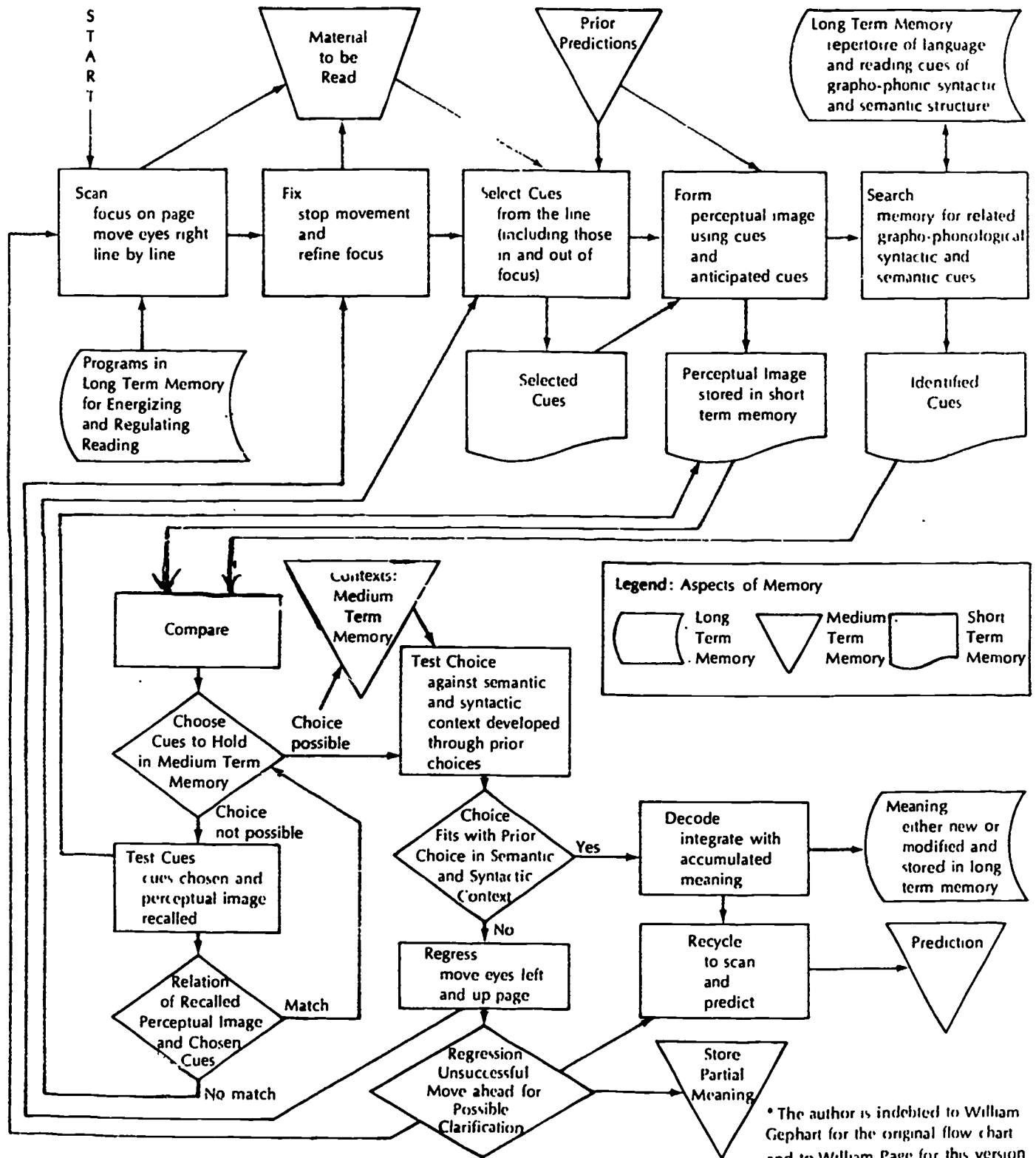
The model stipulates these operations. Scan: move eyes toward right and bottom of page. Fix: stop eye movement and focus. Select: choose and record some cues in short-term memory. Form: produce a perceptual image. Search: find in long-term memory syntactic and semantic structures and information compatible with the image. Compare: check product of search against image. Choose: select cues and insert in medium-term memory. Branching possibility: if no choice is possible, re-examine perceptual image. If this yields a mismatch return to Select for more information. Otherwise return to Choose for a new choice. Test Choices: determine if current choices are consistent with semantic and syntactic context (from prior choices). If yes, Decodes: integrate with accumulating meaning and then recycle to Scan. If no, Regress: move eyes to left and up page seeking point of inconsistency, then recycle to Fix.

#### Statement of Problem

Over the years, there has been recognition, in varying degrees, that the study of children's oral reading errors was a worthwhile activity. The studies that were conducted centered mostly around assessment of ability, diagnosis, and remediation. Most of these researchers skirted or missed completely the real potential in the study of oral reading errors; that is, through them the process of reading itself may be studied.

"Twenty-three years ago," says Constance McCullough, "I reported the discoveries my college students had made about seven

The Goodman Model of Reading



types of context clues to the meaning of unfamiliar words. My thinking stopped with theirs. I realize, now, that we were seeing only the top of the iceberg; nine-tenths of the signals suggestive of meaning were hidden by our ignorance of other supportive linguistic cues (McCullough, 1967)."

The basic premise of this research, and of the research which preceded it, is that errors are not accidental or haphazard. They are generated in response to the same cues and utilize the same processes as correct reading. By contrasting the actual reading with the expected reading we are able to gain insight into the use and misuse of available cues and the processes used by readers as they read. We prefer to call the phenomena we have studied miscues rather than errors, because they are not intrinsically bad or destructive or avoidable. The term error implies all of those negative qualities.

Central to the research is the development of a system for categorizing the phenomena observed. This system was developed to meet two requirements: 1. It must be consistent with scientific, linguistic and psycholinguistic knowledge. 2. It must be applicable to the objective categorization of all phases of all phenomena occurring in oral reading. (See procedures and appendix for a fuller discussion of the miscue analysis.) In contrast to past studies of reading errors, this series of studies required an underlying theory to make possible the systematic treatment of the phenomena rather than the eclectic tallying of errors under arbitrary headings.

This research has been characterized by constant interplay between the developing theory of the reading process and the descriptive taxonomy of the reading phenomena, and both are constantly being checked against the oral reading under study.

Essentially, this research has been an attempt to describe and explain oral reading performance and, through this, to understand reading competence.

The principal investigator is convinced that atheoretical research in reading is no longer justifiable. Theories and models should not be confused with the realities they are set up to represent. But without theories, data are accumulated with no means of organization which moves the field toward new insights and syntheses, and eventually toward the solution of problems. With a theory of reading sufficiently explicated, a theory of reading instruction will be possible upon which sound, effective methods and materials can be based.

#### Brief Review of Related Research

The literature surveyed is representative of three major categories in relation to this research. They include:



1. research on oral reading errors,
2. research on the application of linguistics to reading, and
3. research designed to test or establish theories of reading.

### Oral Reading Errors

Analysis of oral reading errors has been characterized by an atheoretical establishment of arbitrary, non-parallel, and overlapping categories. Examples of these arbitrary categories can be found in the work of Spache (1964) and Farr (1969) both of whom attempted to summarize research studies done in regard to informal reading inventories. Both concluded that one reason these studies have not found validity is because of the establishment of arbitrary and dissimilar categories. The categories included fluency, work attack, voice volume, enunciation, and posture. And one researcher's substitution was another researcher's mispronunciation.

Weber (1968), in a thorough review of research on reading errors cites the repeated use in research of categories such as repetition, hesitation, poor enunciation, which are related to the superficial refinements of oral reading and not to the process itself. Repetitions, in fact, have been shown to be not errors at all, but part of a corrective, self-teaching process (Goodman, 1965).

Weber also points out the lack of linguistic sophistication of studies of reading errors. All omissions are classified under a single heading, for example, a letter omission in the substitution of very for every is lumped together with a word omission, The pencil is broken for The pencil sharpener is broken.

Diagnostic tests in reading are largely based on the same eclectic views that have characterized research on errors. Farr (1969) states that one of the major shortcomings in classroom measurement and evaluation of reading ability stems from incomplete knowledge of the nature of the reading process and the factors that influence it.

While much research in regard to oral reading errors has considered these errors in a negative manner, counting them as quantitative signs of reading problems and reader deficiencies, more recent studies have looked at reading errors in a positive manner.

Less than a decade ago, Goodman (1965) suggested that oral reading miscues can provide positive clues to the process of reading.

In a survey of literature, Weber (1968) concurred with Goodman and stated that the study of oral reading errors provide



a study of the reading process. With a positive approach, Weber (1967), used the reading errors of twenty-one first-grade children to describe reading strategies and processes.

Clay (1967) looked at quality as well as quantity of reading errors and was concerned with repetitions and self-corrections.

Nurss (1969) found that an analysis of oral reading errors can provide information about the reader's understanding of syntax and semantics within the passage read, and she used uncorrected oral reading errors as one method of assessing comprehension.

A study by K. Goodman (1965) resulted in some new insights into reading cues and miscues. As a direct result of that research, the first version of the Goodman Taxonomy of Reading Miscues was designed.

The taxonomy, which organizes miscues according to linguistic and psycholinguistic characteristics, has been used by a number of researchers to further investigate the miscue phenomenon.

Y. Goodman's (1967) developmental study looked at first-grade reading achievement. K. Goodman and Burke (1968) analyzed proficient readers in the fourth and fifth-grades. Burke's (1969) study placed emphasis on the effect and significance of miscues which involved changes in grammatical structure. Her study of restructurings resulted in an addition to the taxonomy.

Allen (1969) examined oral reading substitutions at several levels. Page (1970) moved toward a classification of the relationship of miscue phenomena to graded material. Carlson (1970) analyzed the miscues made by subjects reading selections differing in content. Martellock (1971) looked at the relationship of the child's writing to his oral reading, and analyzed reading errors made when subjects read their own manuscripts. Menosky (1971) described the qualitative differences among miscues generated in varying portions and lengths of text. Gutknecht (1971) studied the miscues made by subjects who had been identified as perceptually handicapped. Sims (1972) looked at miscues generated by Black subjects during their reading of both standard English and Black dialect materials. Rousch (1972) studied the effect of high relevant conceptual background on reading.

#### General Applications of Linguistics to Reading

Early applications of linguistic knowledge to reading were narrow. Bloomfield (1961) was concerned almost totally with phonemics. He believed that only regular phoneme-grapheme

correspondences should be presented in materials. He was not concerned with a study of the process of reading, nor did he attempt to make any additional applications of linguistics to the process of reading.

Fries (1964) went further than Bloomfield. He looked at reading theoretically but restricted himself to a narrowly defined method of reading based upon spelling patterns and the principle of minimal contrast found in descriptive linguistics. Lefevre (1964) partially developed a sentence approach to reading by looking at syntactic cues including intonation. With rare exceptions, educators either totally accepted or totally rejected one or another of these methodological points of view.

There were exceptions to this narrow approach. Strickland (1962) studied the structure of children's language and compared it with that of the language in basal readers. Loban (1963) used similar analyses in his longitudinal study of children's language development. Bormuth (1969) has done psycholinguistically based research on reading comprehension.

Hunt (1966) studied grammatical structure in children's composition and identified differences in complexity at successive ages. He dealt with written expression as an encoding process.

Reading is primarily decoding, but oral reading also involves some encoding, since the reader must produce an oral version of what he reads. Goodman's (1969) findings indicate that proficient readers decode directly from the graphic stimulus, and then encode from the deep structure. These readers perceive the meaning of the passage without necessarily reconstructing each word. This is possible because of the reader's simultaneous use of graphic, syntactic, and semantic information.

Although more research is now applying individual aspects of linguistics or psycholinguistics to reading (syntactic: Brown and Hanlon, 1970; Bever, 1970), there is a real lack of such studies which look at the total process of reading.

#### Theories of Reading

The concern expressed by Helen M. Robinson (1968) that "The major deterrent to research on the reading process is the inefficiency of techniques for investigating the problems (p. 401)" is, for the most part, still true. Her suggestion is that "A wealth of information about processes could be secured from carefully planned...examination of children's reading behavior (p. 401)."

Kolers (1970) has examined visual operations, sensitivity to grammar, and direct perception of the meanings of words, in an

attempt to contribute to a general model of the reader. However, he has not yet presented a comprehensive theory of reading.

Ruddell's (1970) model of reading places emphasis on the importance of denotative and connotative meaning as well as on other linguistic aspects. He also considers the role of affective factors in reading. His theory appears to have some potential in explaining the reading process.

One of the best known theories of reading, Holme's "Substrata-factor" theory, is not a theory at all, but an artifact of manipulation of statistics generated by a set of reading tests. As Clymer (1968) points out, it is not possible to explain or predict cause and effect relationships on the basis of the Holme analysis, nor does it generate testable hypotheses.

With few exceptions (Goodman, 1970; Ruddell, 1970), theories of reading have been thinly built on partial views of the reading process. Such criticism can also include the Project-Literacy research as reviewed by Wanat (1971) to the extent that these researchers have been content to look at one portion of the reading process at a time.

Research programs designed to test comprehensive theories of the nature of language and language use have been nearly nonexistent. Athey (1971), after extensively reviewing close to thirty models of reading, few of which are backed by research, states that the cognitive and psycholinguistic models of reading which she examined do provide promising leads in the study of language and reading. Her report was part of a literature search phase of the USOE sponsored Targeted Research Program in reading. This research can be considered theory validating research within the Targeted Research framework.

The Targeted Research program has itself produced a great deal of model building activity. Geyer (1972) describes forty-three models he examined under three categories:

1. comprehensive models specifically of the reading process (8),
2. comprehensive models of processes related to reading (15), and
3. partial models of processes involved in or related to reading (20).

He includes among the eight comprehensive models (Geyer, 1972), in addition to the Goodman and Singer-Holmes models, the following:

Roberts and Lunzer's model, views ... "reading as a type of listening with visual input." It emphasizes reduction of uncertainty.

Venezky and Calfee's model posits that ... "essential processes...are high speed visual scanning, dual processing, and a search for the LMU (largest manageable unit)."

The Mackworth model is a synthesis of the author's own views after reviewing other models. It represents the functioning of perceptual and memory systems in the reading process.

Geyer's model deals with processing and storage systems in reading.

Hochberg's model emphasizes that the reader must "pay attention" to meaning in reading. Reading, to Hochberg, is hypothesis testing.

Crosby's model of reading presents reading as translating graphic symbols to sounds.

With the exception of the last, developed by a neurologist, all these recent models make some use of linguistic, psychological, and psycholinguistic insights to get at the reading process. Some are related to the authors' research on aspects of reading, some are based on synthesis of the research of others, some are responses to other people's theories.

There is a critical need for research which can compare and validate the predictive and explanatory powers of these models.

#### Scope of this Research

The children in this study are from urban schools in the Detroit and Highland Park, Michigan districts. They include Black and White pupils of both sexes, from grades two, four, six, eight and ten.

The subjects are designated as high, average, and low readers in each of those five grades, and, in addition, low-average and high-average subjects from grades two and ten were studied.

Specifically, oral reading protocols involve subgroups of five or six subjects each. It must be remembered that our concern is more with the range of behavior in various stages and levels of reading proficiency than with precise statistical study of representative samples.

The following subjects are studied in this project:

Group 1. A group of second grade children, including subgroups of high, high-average, low-average and low reading proficiency.

- Group 2. A group of fourth-grade children, including subgroups of high, average and low reading proficiency.
- Group 3. A group of sixth-grade children, including subgroups of high, average and low reading proficiency.
- Group 4. A group of eighth-grade children, including subgroups of high, average and low reading proficiency.
- Group 5. A group of tenth-grade pupils, including subgroups of high, high-average, low-average and low reading proficiency.

### Significance

Specifically, the research provides data on the reading process which characterizes readers at different levels of maturity and skill. More basically, it contributes to a coherent understanding of the reading process.

Further, the research contributes to validation and refinement of the model and its underlying theory.

Theory building in reading makes a contribution to basic linguistic knowledge. Reading is one of four language processes. Speaking and writing are generative, expressive, linguistic processes; whereas, reading and listening are receptive ones. Linguists of all persuasions have tended to be more concerned with generative than with receptive language processes. Unless both are understood, theories of syntax, semantics, and phonology will be incomplete. Reading, particularly oral reading, offers a unique vehicle for language study. The researchers may compare expected performance (on the basis of the graphic display) with observed performance. From the differences, much may be learned about the competence which underlies performance and the psycholinguistic processes of the language user.

This research has opened many new avenues of investigation. Some are applications of miscue analysis, now a relatively "debugged" procedure, to research issues. Recent and current dissertations done by staff members illustrate this potential. Rousch (1972) has applied it along with cloze procedure to the oral and silent reading of children determined to have high and low conceptual development related to a reading task. Sims (1972) used it to compare reading of two dialect versions of the same stories by Black children.

Romatowski (1972) studied reading of Polish and English texts by bilingual subjects.

Thornton's study (1973) deals with the reading of stories with and without prior purpose being set.

Hypotheses have been generated by the research that can be tested by researchers who are more oriented to hypothesis tested studies. Such studies could deal, for example, with material specially written with various degrees of syntactic complexity designed to produce miscues at predictable places.

Classroom research designed to test predictions about the improvement of reading competence could be conducted on formal or informal bases. It might be worthwhile, for example, to design activities with the goal of helping readers to know when and how to correct miscues. Watson (1973) used a modified version of the taxonomy, the Reading Miscue Inventory (Y. Goodman and Burke, 1972) to develop classroom procedures and activities. Young (1972) used the same instrument to study the reading miscues of Mexican-American readers.

Perhaps one of the most significant results of our research, is the challenge it lays down to researchers, text developers, curriculum planners, and teacher educators to examine their work in light of what is now known about the reading process. Many will not accept our conclusions about how reading works but in doing so they must find alternate explanations for evidence we present. No longer can trial and error be justified by the plea that "nobody knows how reading works."



## CHAPTER 2

### METHODOLOGY

In reading miscue research, as it has evolved over a ten year period, the essential task is for each subject to read in its entirety a somewhat difficult story, which he has not read before.

The subject's reading is recorded on audio or video tape and subsequently analyzed by the research staff. A complete manual for miscue analysis procedures is provided in the Appendix. In this chapter, the procedures will be summarized.

#### Selection of Subjects

The subjects are from urban schools in Detroit and Highland Park, Michigan. There are ninety-four subjects in the study assigned to seventeen subgroups which consist of five or six readers each. There are five readers in each of the four second-grade groups (low, low-average, high-average, and high). In the fourth, sixth and eighth-grades there are six readers in three groups (low, average, and high). In the tenth-grade there are five readers in four groups (low, low-average, high-average, and high).

All tenth-grade and the high eighth-grade groups read two stories which are treated in the research as separate tasks. Low second and fourth-graders read two stories which are combined, because of their brevity, as a single task.

Subjects within each subgroup were considered to be at comparable reading levels. No attempt was made to control for race or sex. The subjects do not represent a sample of a larger population. Each group is, in a real sense, a separate study. To facilitate comparison, all members of one group read the same story or stories. For further comparison, several groups (two to five) read the same stories.

#### Selection of Stories

The goal in selecting stories, was to provide a comparable, somewhat difficult, task for every group. An exception was the tenth-grade. All tenth-grade groups, except the 10L group, read story 60 and all tenth-grade groups read story 61. The 8H group also read stories 60 and 61. In this instance, groups of varying proficiency met with an identical task.

Table 2-1 provides a description of groups and indicates the stories they read.

Table 2-1

## Subgroup Composition and Tasks

Reading Level		Males			Females			Subgroup Totals	
Group	Subgroup	Story	Black	White	Other	Black	White		Other
2	2L	22/24	3	1	0	1	0	0	5
	2LA	44	4	0	0	1	0	0	5
	2HA	47	1	2	0	2	0	0	5
	2H	51	0	3	0	0	1	1	5
Total			8	6	0	4	1	1	20
4	4L	26/28	3	0	0	2	0	1	6
	4A	51	3	1	0	2	0	0	6
	4H	53	2	2	0	0	2	0	6
Total			8	3	0	4	2	1	18
6	6L	47	4	0	0	2	0	0	6
	6A	53	1	2	0	2	1	0	6
	6H	59	0	3	0	2	1	0	6
Total			5	5	0	6	2	0	18
8	8L	53	3	0	0	3	0	0	6
	8A	59	2	0	0	1	3	0	6
	8H	60/61	1	0	0	1	4	0	6
Total			6	0	0	5	7	0	18
10	10L	59/61	2	0	0	2	0	1	5
	10LA	60/61	1	2	0	2	0	0	5
	10HA	60/61	2	0	0	1	2	0	5
	10H	60/61	1	1	0	1	2	0	5
Total			6	3	0	6	4	1	20
Sub-Total			33	17	0	25	16	3	
Grand Total				50			44		94



## Stories

All stories, except 59, 60 and 61, are from the American Book Company series edited by Emmett Betts (Betts Basic Readers, Third Edition, Betts, E.A. and C.M. Welch, American Book Co., 1963). Following is a brief description of each story.

Story 22. "Little Monkey" Source: Primer. This story is about a man who loses his monkey. The monkey takes some toys and all are found together.

Story 24. "Little Freddie" Source: Primer. Freddie wants to help and he is told he is too little. But he finds he is not too little to help with little things.

Story 26. "Two New Hats" Source: Primer. Something falls out of a tree on Mrs. Duck's head. The other animals think it is a new hat.

Story 28. "The Big Surprise" Source: Book 1. Ted meets a man who is blowing up balloons. His surprise is discovering that the man is a clown who is advertising the circus coming to town.

Story 44. "Kitten Jones" Source: Book 3-1. The children in the Jones family are taking pictures for a photography contest. Accidentally the kitten takes a picture of a bird and wins first prize.

Story 47. "Billy Whitemoon" Source: Book 3-2. Billy, a Winnebago Indian boy, makes up songs, but he is too shy to sing them at the tribal gathering. One day he prevents a hunter from shooting his pet deer by singing a song which the deer responds to, thus proving his ownership. Billy is then encouraged to sing his songs publicly.

Story 51. "Freddie Miller, Scientist" Source: Book 4. Freddie is always in trouble because of his experiments and inventions. One day when his sister becomes locked in a closet and becomes panicky, Freddie improvises a flashlight and drops it to her, thereby calming her until she is freed.

Story 53. "My Brother is a Genius" Source: Book 6. A boy, often left to baby sit with his little brother, finds that the baby falls asleep when words from the dictionary are read to him. He decides to make his little brother his school project and convinces a TV station manager to feature him as a "typical baby." Everything goes well until the boy discovers that the baby can say many of the dictionary words, such as "Philosophical." A crisis occurs when he does so just before showtime. The crisis is resolved when the boy reads the soothing words beginning with S to the baby until he falls asleep.

Story 59. "Sheep Dog" Source: Eighth-Grade Anthology. Peggy, a sheep dog, is left alone to defend the herd when her mate is killed by coyotes and the herder dies. Her own hunger and that of her puppies does not deter her from the defense of her charges. She kills or drives off the coyotes and is near death herself when help arrives.

Story 60. "Poison" Source: Twelfth-Grade Anthology. In this story, by Roald Dahl, a man comes home to discover that his housemate believes a small deadly snake is lying on his stomach. A Hindu physician is summoned; he injects the man with anti-venom serum and soaks the mattress with chloroform. When the covers are removed, after a long tense period, no snake is found. The doctor suggests it was imagined, whereupon the man explodes with racial slurs against his benefactor.

Story 61. "Why We Need a Generation Gap" Source: Look Magazine. This essay, by Roger Rapoport, is an expression of the author's point of view about the controversial generation gap. It employs many subtle references to contemporary politics, people, and events. The point of view is unconventional.

#### Taping Procedures

Each subject reads orally the selected story in its entirety. A researcher notes reading miscues on a duplicate manuscript during the oral reading. The subject is then asked to retell the story in his own words. In any questioning or probing for clarification during the retelling, the researcher is careful not to add any information.

Both the oral reading and the retelling of the story are recorded on tape. Prior to the taping, each subject is told that he will read an unfamiliar, somewhat difficult story, and that the researcher will offer no help. He is told that he can use any reading techniques, and that he will be asked to retell the story at the close of the reading. It is emphasized that his oral reading will help teachers understand how children read, and that no grades or marks will be given.

The taping is done in the subject's school and requires one and one-half to two hours for each subject.

#### Comprehension (Retelling) Rating

A typescript of the oral retelling is made, and a comprehension rating scale is used to score each subject's retelling of the story (see Appendix E). The possible scores range from zero to one hundred. Each retelling is evaluated by two researchers working independently of each other.

### Personal Data

A personal data sheet is compiled for each subject. School records and teacher information are sources of information also.

### Preparing Official Worksheets

The recordings are replayed until each miscue (OR does not match ER) is identified precisely and added to the subject's story sheet. Every reading is listened to, by a minimum of two researchers, until agreement is reached on the identification of each miscue. An official copy of the story with marked miscues results from the work of the listeners.

### Coding Miscues

The official copy of the reader's miscues is then analyzed by researchers according to The Goodman Taxonomy of Reading Miscues. Because of the volume, only the first half of the first fifty miscues in stories 47, 51, 53, 59, 60 and 61 are coded.

After a second researcher checks the coding sheets for errors, the data is keypunched on IBM cards. The cards are verified and rechecked, prior to storage in a computer file.

### Coding and Storing of the Text

The text of each story is coded for the grammatical function of each word. The coding is checked and keypunched on IBM cards. A computer program stores the text with the grammatical function of each word in each story. A print-out of the story, retaining the line-breaks of the original, is checked and edited at a computer terminal so that there are no errors in the stored version.

### Reformatting the Miscue Data

Using the stored story text and grammatical coding, the program reformats the miscue data and provides error messages when needed. This program also supplies additional data such as grammatical function of the ER, location of the ER in the peripheral field, and sentence number. The reformatted data is then checked and edited at the terminal.

### Computer Analyses

A number of other computer programs provide statistical information, as follows:

1. A basic statistical analysis of key variables of the data by subjects within groups is made.

2. Subject and subgroup frequencies and percents for each variable are provided.

3. Subgroup contingency tables for any pair of variables are produced. To balance the effect, only fifty miscues of each subject, are included.

4. Correlation matrices for key variables, for groups of subjects, are provided.

5. Alphabetical lists of the words in each story, with frequency of occurrence and the grammatical function for each word, are produced. The same program also lists the frequency of grammatical functions and provides lists of all words having those functions.

All data is restored on tape and cards for further analysis.

#### Depth Analyses

Most research studies in reading have chosen to investigate a few variables, over relatively large groups. This study, which attempts to describe all possible variables involved in reading miscues, is a depth study.

Table 2-2 indicates the mass of data analyzed in this study. To facilitate comparison, Miscues Per Hundred Words (MPHW) is calculated. But the basic data of this research is roughly the total coded 8844 miscues multiplied by 18, the number of variables in the taxonomy, i.e.,

$$8844 \times 18 = 159,192.$$

To this must be added the 1771 coded sub-miscues, each coded on one or more variables.

Each miscue is analyzed according to the Goodman Taxonomy. A full discussion is presented in Appendix D. Here we present a short form which lists each variable and possible sub-categories. All sub-categories are mutually exclusive. Some variables may be left blank if inappropriate, but others are marked for every miscue.

Table 2-2  
Total and Coded Miscues

Group - Story	Total Miscues	Total Sub-Miscues	Total Coded Miscues	Total Coded Sub-Miscues
2L22/24	235	66	235	66
2LA44	355	62	355	62
2HA47	474	66	276	37
2H51	379	97	252	67
4L26/28	369	78	369	78
4A51	723	155	377	66
4H53	451	126	292	77
6L47	1028	123	554	79
6A53	526	87	303	58
6H59	904	157	484	98
8L53	1380	244	621	153
8A59	1122	389	585	174
8H60	788	107	428	75
8H61	284	68	267	56
10L59	1897	251	1025	144
10LA60	1100	189	550	112
10HA60	709	96	389	63
10H60	467	56	255	39
10L61	900	159	488	90
10LA61	526	131	289	68
10HA61	391	78	260	62
10H61	205	45	195	45
Total	15213	2820	8849	1771

GOODMAN TAXONOMY OF READING MISCUES -- SHORT FORM

- 1 Correction
  - 1.0 no
  - 1.1 yes
  - 1.2 abandons correct
  - 1.9 unsuccessful
  
- 2 Dialect
  - 2.0 no
  - 2.1 yes
  - 2.2 idiolect
  - 2.3 super correct
  - 2.4 secondary involvement in miscue
  - 2.5 foreign language influence
  - 2.9 doubtful
  
- 3 Graphic Proximity  
(this category is left blank when inappropriate)
  - 3.0 no similarity
  - 3.1 key letter or letters in common
  - 3.2 middle portion similar
  - 3.3 similar ending
  - 3.4 similar beginning
  - 3.5 similar beginning and middle
  - 3.6 similar beginning and end or middle and end
  - 3.7 beginning, middle and end similar or reversals of three letters or more
  - 3.8 single grapheme difference or reversals of two letters or all but punctuation
  - 3.9 homographs
  
- 4 Phonemic Proximity  
(this category is left blank when inappropriate)
  - 4.0 no similarity
  - 4.1 key sound or sounds in common
  - 4.2 middle portion similar
  - 4.3 similar ending
  - 4.4 similar beginning
  - 4.5 similar beginning and middle
  - 4.6 similar beginning and end or middle and end
  - 4.7 beginning, middle and end similar
  - 4.8 differ in single vowel or consonant or morphophonemic or intonation shift (including schwa)
  - 4.9 homophones

- 5 Allologs
  - 5.0 no
  - 5.1 contraction for full form
  - 5.2 full form for contraction
  - 5.3 contraction not represented in print
  - 5.4 long/short form of E.R. or syllable deletion/insertion
  - 5.5 shift to idiomatic form
  - 5.6 shift from idiomatic form
  - 5.7 misarticulation
  
- 6 Syntactic Acceptability
  - 6.0 no
  - 6.1 only with prior
  - 6.2 only with after
  - 6.3 in sentence
  - 6.4 in total passage
  
- 7 Semantic Acceptability  
(this category can not be scored higher than category 6)
  - 7.0 no
  - 7.1 only with prior
  - 7.2 only with after
  - 7.3 in sentence
  - 7.4 in total passage
  
- 8 Transformation
  - 8.0 no
  - 8.1 different deep structure
  - 8.2 same deep structure with different compulsory rules and alternate surface structure
  - 8.3 same deep structure with optional rules and alternate surface structure
  - 8.4 deep structure lost or garbled
  - 8.9 doubtful
  
- 9 Syntactic Change  
(this category is marked when category 6 is '3' or '4' and left blank when category 6 is '0', '1', or '2'.)
  - 9.0 unrelated
  - 9.1 single element in common
  - 9.2 key element in common
  - 9.3 major change in sentence pattern
  - 9.4 minor change in sentence pattern
  - 9.5 major change within structure of the phrase
  - 9.6 minor change within structure of the phrase
  - 9.7 change in person, tense or number
  - 9.8 change in choice of function word or other minor shift
  - 9.9 unchanged

- 10 Semantic Change  
 (this category is marked when category 7 is '3'  
 or '4' and is left blank when category 7 is  
 '0', '1', or '2'.)
- 10.0 completely anomolous to rest of story
  - 10.1 change or loss affecting plot in basic  
 sense or creates major anomalies
  - 10.2 change or loss involving key aspects or  
 seriously interferring with sub-plots
  - 10.3 change or loss resulting in inconsistency  
 of major incident, major character or  
 major aspect of sequence
  - 10.4 change or loss resulting in inconsistency  
 of minor incident, minor character or minor  
 aspect of sequence
  - 10.5 change or loss of aspect which is significant  
 but does not create inconsistencies
  - 10.6 change or loss of unimportant detail
  - 10.7 change in person, tense, number, comparative,  
 etc. which is noncritical
  - 10.8 slight change in connotation or similar name  
 which doesn't confuse cast
  - 10.9 no change
- 11 Intonation
- 11.0 no
  - 11.1 within words
  - 11.2 between words within one phrase structure
  - 11.3 relative to phrase or clause structure of  
 the sentence
  - 11.4 end of phrase or sentence (terminal)
  - 11.5 conjunction substituted for terminal or  
 vice versa
  - 11.6 intonation involving direct quotes
- 12 Sub Morphemic
- 12.0 no
  - 12.1 substitution
  - 12.2 insertion
  - 12.3 omission
  - 12.4 reversal
  - 12.5 multiple minor variations
- 13 Bound and Combined Morpheme
- |                   |                                   |
|-------------------|-----------------------------------|
| 13.0 no           | 13.0 no                           |
| 13.1 substitution | 13.1 inflectional suffix          |
| 13.2 insertion    | 13.2 non-inflected form           |
| 13.3 omission     | 13.3 contractional suffix         |
| 13.4 reversal     | 13.4 derivational suffix          |
|                   | 13.5 prefix                       |
|                   | 13.6 miscue across affix<br>types |
|                   | 13.7 miscue involving base        |



14 Word and Free Morpheme

- |      |              |      |   |
|------|--------------|------|---|
| 14.0 | no           | 14.0 | no  |
| 14.1 | substitution | 14.1 | multiple morpheme word (O.R.) for multiple morpheme word (E.R.) |
| 14.2 | insertion    | 14.2 | single morpheme word (O.R.) for single morpheme word (E.R.)     |
| 14.3 | omission     | 14.3 | multiple morpheme word (O.R.) for single morpheme word (E.R.)   |
| 14.4 | reversal     | 14.4 | single morpheme word (O.R.) for multiple morpheme word (E.R.)   |
|      |              | 14.5 | free morpheme in longer word                                    |
|      |              | 14.6 | word in compound  |
|      |              | 14.7 | non-word  |
|      |              | 14.8 | dialect alternative   |

15 Phrase

- 15.0 no
- 15.1 substitution
- 15.2 insertion
- 15.3 omission
- 15.4 reversal

16 Clause

- 16.0 no
- 16.1 substitution
- 16.2 insertion
- 16.3 omission
- 16.4 reversal without change in dependency
- 16.5 clause dependency altered within sentence
- 16.6 clause dependency altered across sentences

17 Grammatical Category and Surface Structure of O.R.  
(this category is left blank when inappropriate)

Category	Filler	Function
17.1 noun	17.10 indeterminate	17.100 indeterminate
	17.11 common	17.1.1 subject
	17.12 proper	17.1.2 direct object
	17.13 pronoun	17.1.3 indirect object
	17.14 verb derived	17.1.4 appositive
	17.15 phrasal unit	17.1.5 address
	17.16 word as word name	

		17.17	quantifier	17.1_6	noun in
		17.18	adjective in noun position		adverbial phrase or other pre- positional phrase
				17.1_7	subject complement
				17.1_8	object complement
				17.1_9	intensifi- cation
17.2	verb	17.20	indeter- minate	17.200	indeter- minate
		17.21	be forms	17.2_1	active
		17.22	transitive	17.2_2	passive
		17.23	intransitive	17.2_3	imperative
		17.24	infinitive	17.2_4	subjunc- tive
		17.25	pro-verbs		
17.3	noun modifier	17.30	indeter- minate	17.300	indeter- minate
		17.31	adjective	17.3_1	subject complement
		17.32	noun ad- junct	17.3_2	embedded
		17.33	verb de- rived	17.3_3	object complement
		17.34	possessive noun		
		17.35	possessive pronoun		
		17.36	titles		
		17.37	adverbial		
		17.38	ordinal number		
		17.39	phrasal unit		
17.4	verb modifier	17.40	indeter- minate	17.400	indeter- minate
		17.41	pro-adverb	17.4_1	place
		17.42	adverb	17.4_2	manner
		17.43	noun form	17.4_3	time
				17.4_4	reason
				17.4_5	other
17.5	function word	17.500	indeter- minate		
		17.501	noun marker		
		17.502	verb marker		
		17.503	verb particle		

17.504 question  
marker  
17.505 clause  
marker  
17.506 phrase  
marker  
17.507 intensifier  
17.508 conjunction  
17.509 negative  
17.510 quantifier  
17.511 other  
17.512 adverb  
particle

17.6 indeterminate

17.61 interjection  
17.62 words out  
of syntactic  
context  
17.63 defies  
classification/  
ambiguous  
17.64 greetings

17.7 contractions

	(left)		(right)
17.71	pronoun	17.7_1	verb marker
17.72	verb marker	17.7_2	be
17.73	be	17.7_3	trans verb (have)
17.74	let	17.7_4	negative
17.75	question marker/ clause marker	17.7_5	pronoun (us)
17.76	it/there/here		
17.77	adverb		
17.78	noun		
17.79	transitive verb (have)		

18 O.R. in Visual Periphery  
(this category is left blank when inappropriate)

18.0 no  
18.1 same line or one line above or below  
18.2 second line above or below  
18.9 doubtful

## Chapter 3

### RESULTS: PART 1

#### Quality and Quantity of Miscues

This is the first of three chapters which present the findings of this research. Because the reading process, and our analysis of it, are complex we will present general phenomena in this chapter. Particular aspects of the process will be presented in Chapter 4, and the process among readers at each level of proficiency, within each grade level will be presented in Chapter 5. As each set of data is presented and discussed it will also be interpreted; we do not wish to remove conclusions too far from the data that supports them.

#### Miscues Per Hundred Words (MPHW)

The basic quantitative measure used in this study is miscues per hundred words (MPHW). This measure is found by dividing the total number of words read into the total number of miscues, and multiplying by 100.

$$\text{MPHW} = \frac{100M}{W}$$

A miscue is any point in the oral reading where expected response (ER) does not match observed response (OR). An extended discussion of the procedures for determining miscues is provided in Appendix A, Manual for the Use of Miscue Analysis. The following summarizes the parameters for inclusion or exclusion of miscue phenomena for this study.

#### Included:

1. The smallest unit necessary to include all information is counted as a single miscue. When necessary, sub-miscues are coded, but the entire complex-miscue is counted as a single unit in MPHW.
2. All dialect miscues except those that are phonological only.
3. Only the first complete attempt at any location in the text.
4. Changes in intonation which result in changed syntax, or changed meaning.

Excluded:

1. Misarticulations - cases where an oral response is clearly a slip of the tongue.
2. Phonological dialect (example: he'p for help).
3. Repeated occurrences of identical OR for ER substitution, or omission of the same ER at several locations in the text. This includes several different non-word substitutions for the same ER word.
4. After the first OR at a single location, all subsequent attempts, except when the first OR is correct, but abandoned.
5. Partial responses in which the reader cuts himself off before producing an entire word. This avoids guessing the reader's intent. (See further discussion of partials, following, in this chapter.)

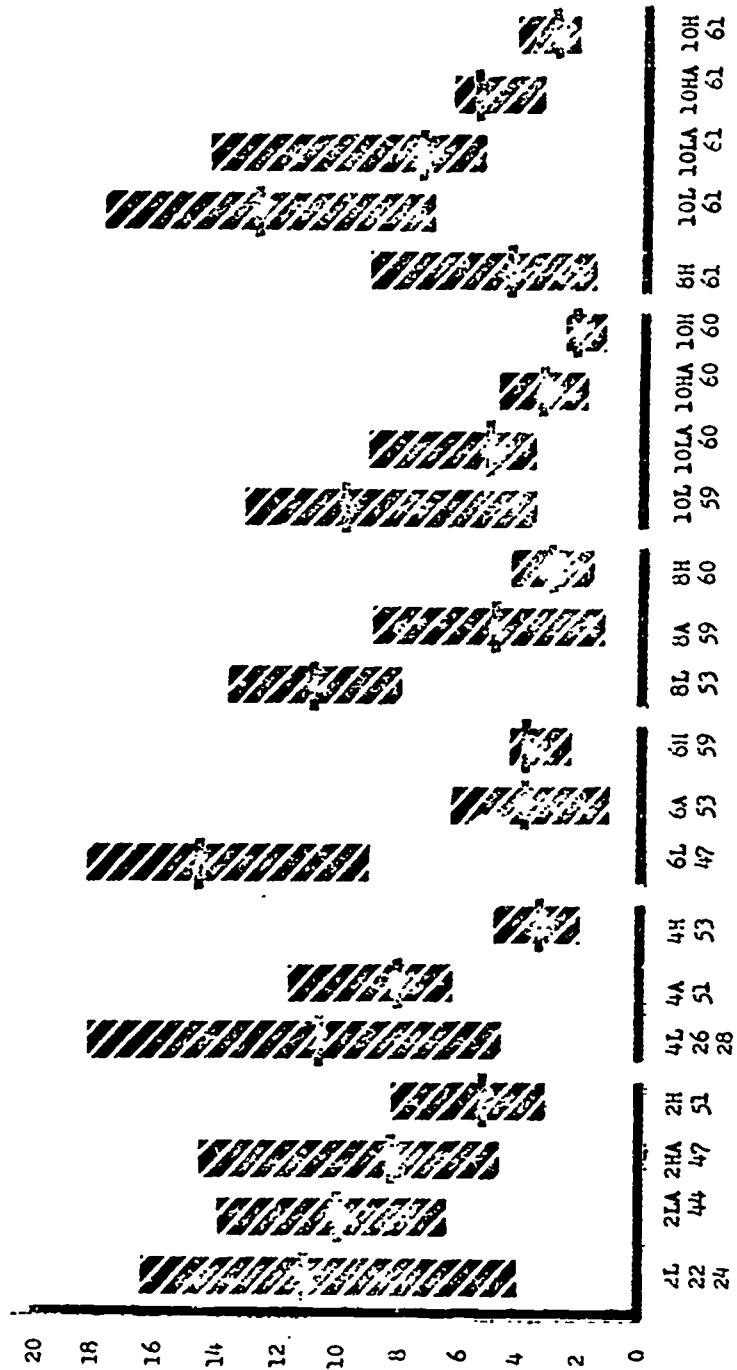
Essentially MPHW is a partially controlled variable, because the story is selected to provide the reader with a moderately difficult task. Though reading teachers have tended to give high priority to accuracy and avoidance of errors, all readers make miscues. Generally, the number of miscues increases as the stories increase in difficulty. Our basic intention was to use small groups of readers who were, within each group, very similar in proficiency, and to vary the difficulty of the stories so that every group had a reading task as equivalent as possible, to that of other groups. In contrast to that general procedure the 8H and all tenth-graders read the same two stories (60 and 61). This was done so that the performance of different proficiency groups, reading stories of varying difficulty, might be compared.

We did not succeed completely in our original purpose. As the data we present later in this chapter will show, some groups had relatively easier tasks than others. The 6A group, for instance, out-performs the 6H group on a number of important dimensions. Our tenth-grade data shows that readers will appear less proficient on more difficult reading tasks. Among the tenth-grade readers, all but two (one high and one low) had higher MPHW on story 61 than 60 or 59 (read by 10L readers). There was also consistent difference on other important aspects reported later in this chapter.

The matter of task equivalence is made more complicated by the uneven way in which reading proficiency develops. There does not appear, on the basis of our research, to be anything like a straight line relationship on any measurable dimension as readers gain proficiency. One cannot assume, for example, that one can control task difficulty by controlling the number of MPHW. It appears that 10H readers make relatively few MPHW on hard tasks as compared to, say, average second-grade readers on easier tasks.

Figure 3-1

Ranges and Means of MPHW



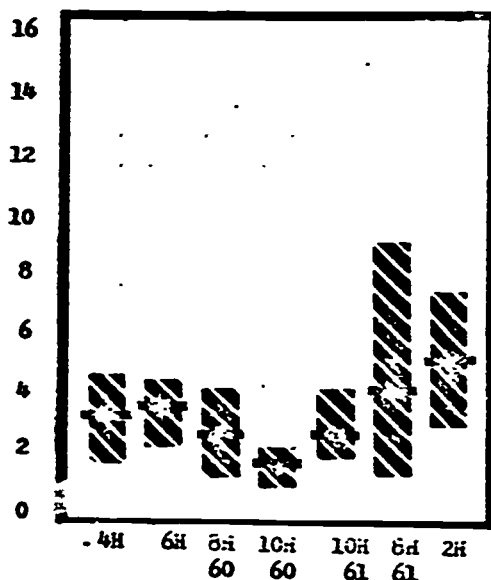
Readability formulas will not help either. Our data shows wide ranges within groups on all aspects which must surely relate to such factors in the reader himself as interest, background, learning style, as well as efficiency and effectiveness in reading. Readability formulas leave out these variables.

We have attempted, within the limitations above, to be cautious about comparing aspects of reading across groups and urge readers of this report to do likewise.

Figure 3-1 shows the range and mean MPHW for each group in each grade. Means are consistently lower as proficiency increases, except with 6A and 6H which have almost equivalent means (High, 4.03 MPHW; Average, 4.24 MPHW). Range is narrowest for all high groups and widest for low groups, except 8L which shows a narrower range than the 8A; some 8A readers have very low MPHW (under 2.00).

Figure 3-2

Ranges and Means of MPHW for High Readers



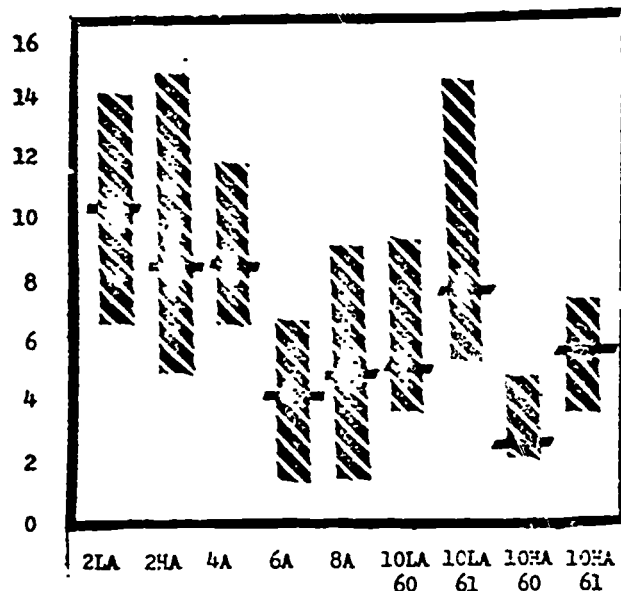
A common rule of thumb in reading instruction is that if readers make more than five errors per hundred words the material is too difficult. In our stories, high groups above second-grade show ranges below 5.00 MPHW (see Figure 3-2).

The data would appear superficially to support that rule of thumb, however we must remember: MPHW excludes repeated miscues on the same word and other "errors" traditionally included in error counts.

Only the 10HA group on story 60 has a range below 5.00 MPHW (2.00 - 4.94) among other groups (see Figure 3-3).

Figure 3-3

Ranges and Means of MPHW for Average Readers



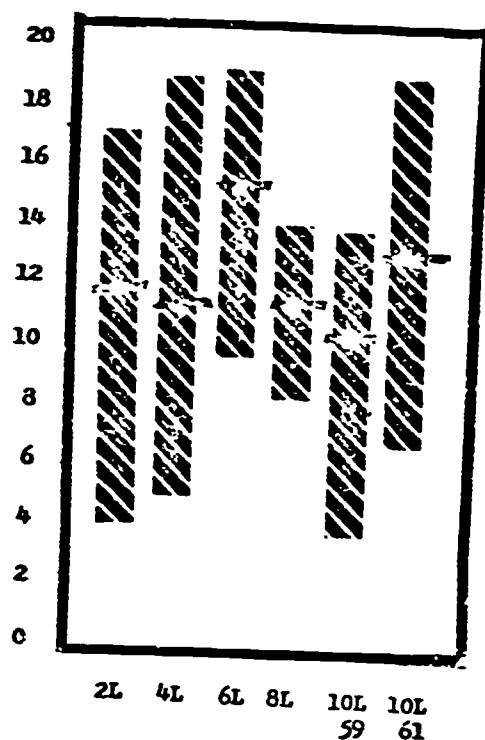
Average readers above grade four at successively higher grade levels cluster around a mean of about 5.00 MPHW except when the going gets rougher, as with the 10LA and 10HA groups reading story 61. Then, on more difficult tasks, their range and mean slip upward. In fact, the range for high-average readers of story 61 looks very much like the range of low-average readers of story 60.

The range of MPHW for 6A, 8A and 10A readers is considerably lower than that for 2A and 4A except for low-average readers of story 61. High eighth-graders are similarly affected by story 61, but not as extremely. Eighth-grade average readers on story 59 have a range very similar to that of the 8H range on story 61. Average readers at all levels tend to have a wider range of MPHW than high readers and a narrower range than low readers.

Except for the 6L readers and 10L readers on story 61, the low readers (Figure 3-4) have mean MPHW between 10 and 12. The range is extremely wide for most low groups, with means near or slightly above the medians for the groups.



Figure 3-1  
 Ranges and Means of MPHW for Low Readers

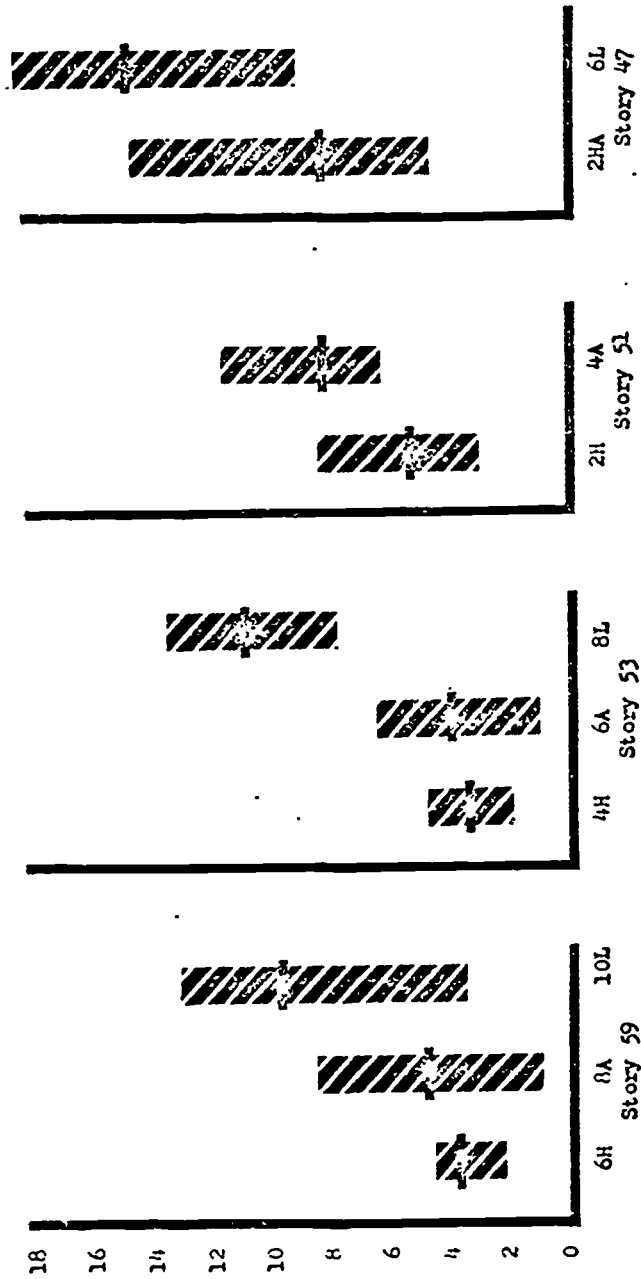


Tenth-grade readers in this research represent a full range of proficiency levels from the 5th (low) to the 95th (high) percentile on a standardized test. They probably represent a range similar to that found among adults (excluding total illiterates). For that reason we varied our basic procedure and had all four groups plus 8H readers read a magazine essay (story 61 - "Generation Gap"), in addition to another story (story 60 - "Poison", except for 10L who read story 59 - "Sheep Dog"). Figure 3-1 indicates that the range of MPHW is consistently lower and narrower for higher proficiency groups. High eighth-grade readers have a range similar to 10HA readers on story 60. For story 61, 8H readers have a wider range, but a lower mean than 10HA readers.

In several cases, groups at different grade proficiency levels were given the same story to read. MPHW are shown in Figure 3-5 for these comparisons. In each case, the group at the lower grade level averages lower MPHW than the next higher grade's low proficiency group. There is greater contrast between average and low readers two years apart than between average and high readers at two year intervals, e.g. the 2HA pupils average fewer miscues than the 6L pupils.

Miscue ranges for pupils at different levels reading the same story overlap, except for 6A and 8L.

Figure 3-5  
 Ranges and Means of MPHW For Groups Reading  
 The Same Story



### Some Conclusions on Quantity of Miscues, Effectiveness and Efficiency

Effective readers are those with high comprehension. Efficient readers achieve that by use of the least amount of graphic information necessary. On the surface it would appear that our data shows a fairly consistent relationship between miscue quantity and proficiency. This should not be taken as proof that accuracy is a prerequisite for efficient, effective reading. Among more proficient readers, it is likely that the tendency for lower quantities of miscues is the result of their efficiency in processing information in reading, rather than the cause of it. Readers who are efficient tend to produce fewer miscues. This seems to be supported by the data on eighth and tenth-graders reading two stories. Their ranges of miscues are similar to those of less proficient readers as they read the more difficult article.

It is important to note the range of MPHW within each group. These ranges tend to overlap to the extent that one can not determine any individual reader's proficiency simply by counting his miscues.

The similarities in MPHW among high readers at different grade levels, in contrast to average and low readers, seem to indicate a difference in efficiency that is maintained even though average and low readers can deal with more complex material at higher grade levels. This is shown by comparing groups of older subjects with groups of highly proficient younger subjects, reading the same story.

### Comprehension and Comprehending

Two measures are used in this research to provide insight into the effectiveness of the reading. Comprehension Rating is based on an evaluation of the subject's oral retelling after reading (see Appendix E, The Manual). Comprehending is a process measure. It is obtained by adding to the percent of all miscues that are fully semantically acceptable, the percent of those which are not semantically acceptable but are successfully corrected. It is called a comprehending measure because it deals with the proportion of miscues which produce acceptable meaning, either before or after correction. It is assumed that this provides insight into the reader's on-going concern for meaning and his success in producing meaningful structures.

Comprehension Rating is a performance measure since it is based on what the reader retells. Comprehending gets closer to underlying competence because it is based on phenomena in the oral reading process itself. Even so it has limitations. We're aware of a silent correction phenomenon, particularly with more proficient readers who correct some miscues mentally without bothering to correct them in oral reading.

## Comprehending.

We will examine comprehending first. Second-grade subjects read a range of materials from primer (read by the 2L group) to fourth-grade (read by the 2H group) level. Figure 3-6 shows that the range on comprehending, for the four second-grade proficiency levels, overlaps considerably, but the mean percent is successively higher, except for the 2HA group, which drops slightly below the low group. Apparently the 2HA group found their tasks somewhat harder to handle, though that is not indicated by MPH data (Figure 3-2), since mean MPH for the 2HA group falls between the 2LA and 2H groups.

Again, mean comprehending percent for the 4A readers on fourth-grade material falls below the mean for the low group, who were reading primer material. Their task seems to be relatively more difficult for them, but again this is not shown in MPH data.

The MPH data for sixth-grade does show comparable means for average and high groups. Comprehending means however, show considerably higher proportions of miscues resulting in loss of meaning for the high group on eighth-grade text material than for the average readers on sixth-grade text material. Comprehending is a measure of quality of miscue as compared to MPH, a quantity measure.

Eighth-grade readers show continuously increasing comprehending means from level to level (Figure 3-7). The effectiveness in handling meaning is higher for the more proficient readers. However, the high readers spread out in range considerably on story 61 (the magazine essay) and the mean falls below the mean for 8A readers on the eighth-grade story.

Tenth-grade readers on three proficiency levels show little difference in range or means on comprehending for story 60 and would appear to differ little in effectiveness. High eighth-grade readers of the same adult story have a comparable high mean, but a wider range.

A very different picture is presented by comprehending ranges for these groups on story 61. Ranges increase (except for high-average readers), there is much less overlap between groups, and means are distinctly lower for less proficient groups. Eighth-grade high readers have the widest range of any group on any story, but a mean second only to the 10H group. Low tenth-grade readers on story 61 have a narrow range and a mean near the low score for 10LA readers. The 10L group has a much greater range and higher mean for story 59.

The comparison of comprehending percentage on stories 60 and 61 demonstrates that while all readers, low-average and above, in tenth-grade are competent to read story 60 with few miscues resulting in loss of meaning, their difference in competence shows on story 61.

Figure 3-6

Ranges and Means of Comprehending Scores for Second Through Sixth Grade Readers

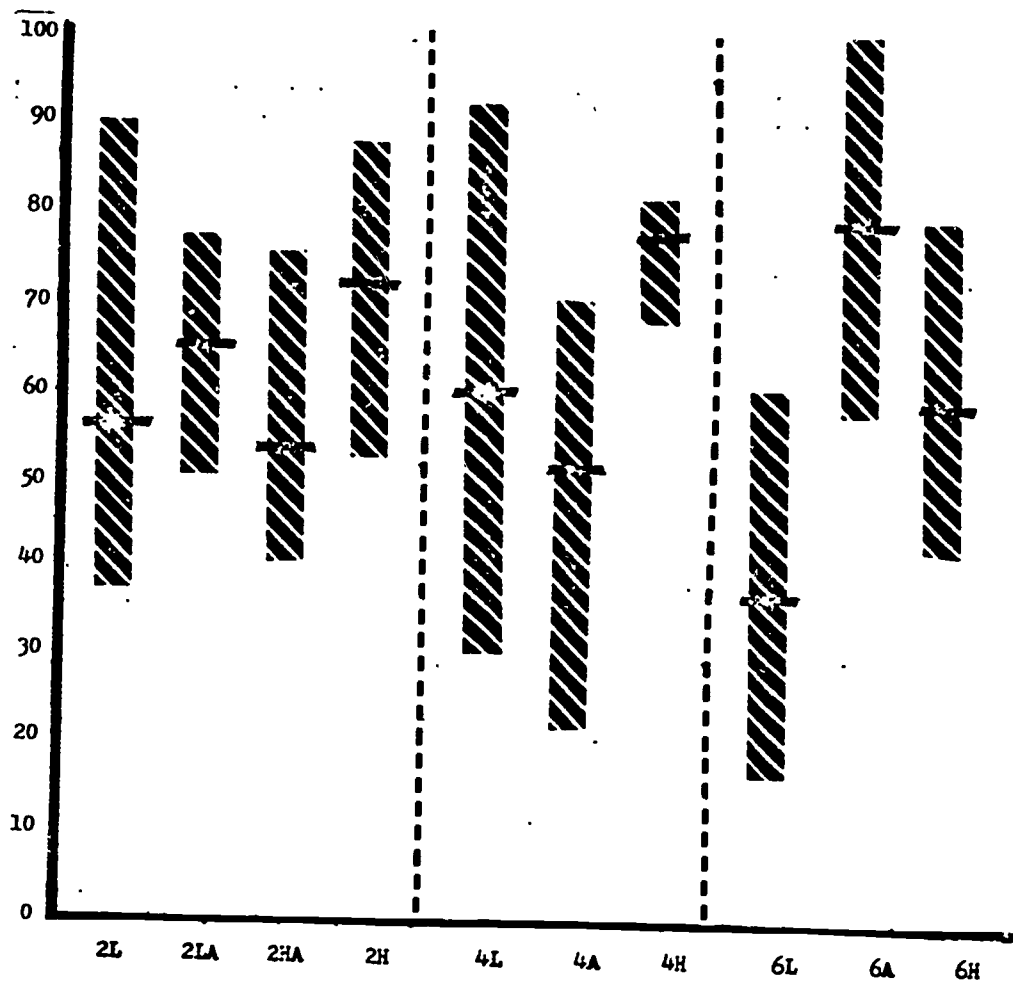
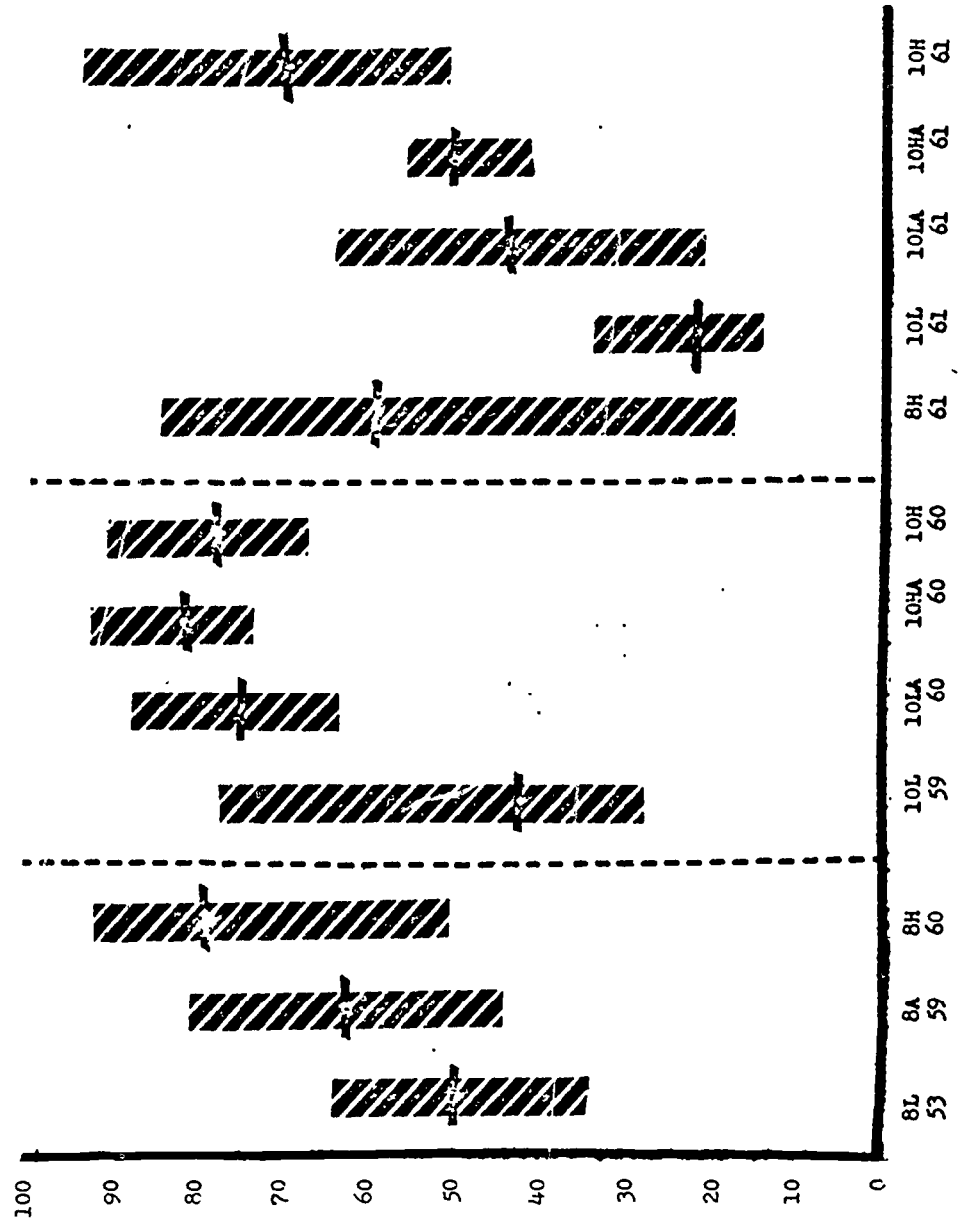


Figure 3-7  
 Ranges and Means of Comprehending Scores For  
 Eighth and Tenth Grade Readers



All 10L readers have higher comprehending scores on story 59 than on 61. All 10LA and 10HA readers have higher comprehending scores on 60 than on 61. Among 10H readers, three have higher comprehending scores on 60, one has virtually identical scores, and one has an appreciably higher score on 61. This last reader has similar percents of semantically acceptable miscues on both stories, but has a much higher percentage of miscues which are semantically unacceptable, but corrected on story 61. All high eighth-graders have higher comprehending scores on 60.

This very consistent difference appears to support the assumption that the comprehending score is a good measure of effectiveness in reading. It's remarkable that only two readers found either no greater difficulty with story 61, or were able to shift their strategies to handle the more difficult task with equal effectiveness.

Figure 3-8

Ranges and Means of Comprehending Scores For Groups Reading the Same Story

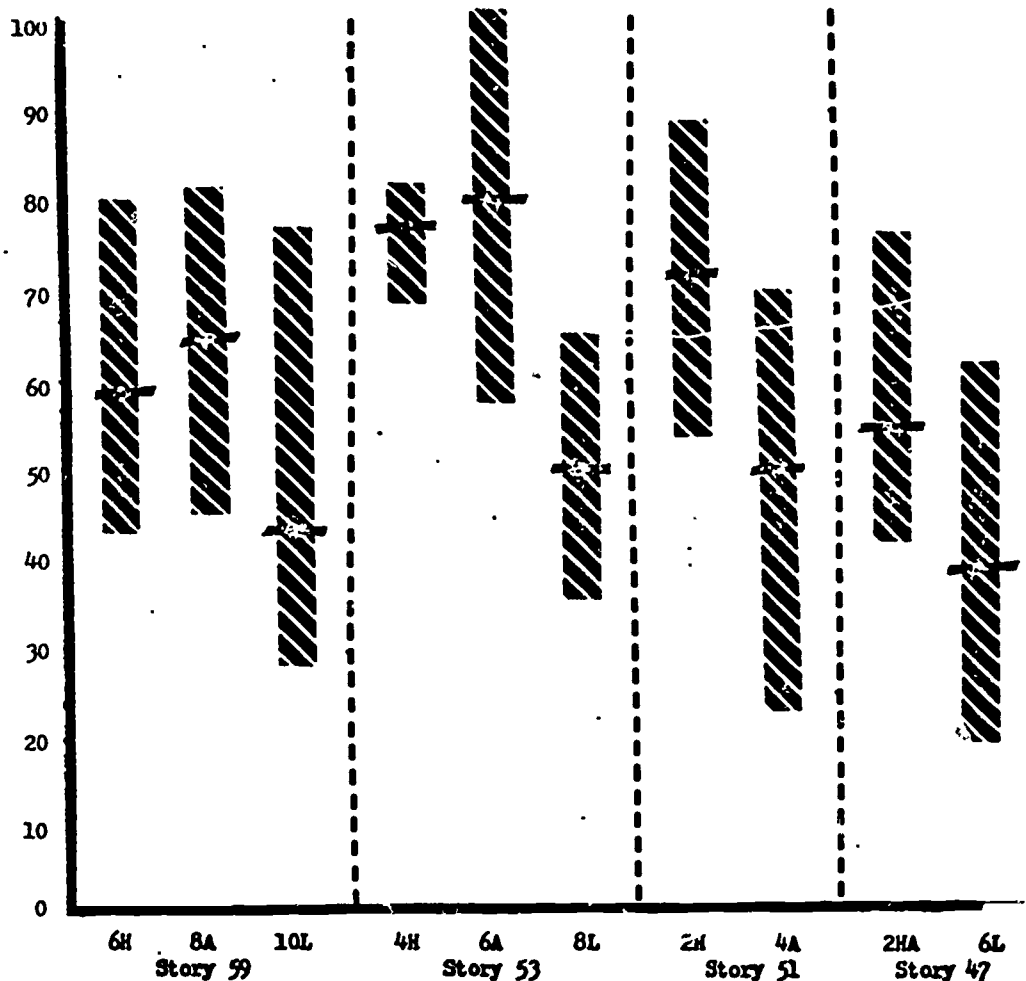


Figure 3-8 shows figures for other groups who read the same story. Among the three groups reading story 59 the 6H and 6A groups have similar ranges and means for comprehending with the 6L group having a wider range and lower mean. The 6A group has the highest mean. A similar pattern shows for the three groups reading story 53. The mean for 4H and 6A groups is similar but the 6L group has an appreciably lower comprehending mean.

High second-grade readers have very much higher mean comprehending rating than 4A readers on story 51 (fourth-grade text). High average second-graders similarly outstrip 6L readers on story 47 (third-grade text), though with more overlap in range.

### Comprehension

Comprehension ratings for second through sixth-grade readers are presented in Figure 3-9. The 2L group has a higher mean and range than the other groups, possibly because of the simplicity of the primer stories they read. The means and ranges for the other three groups get successively higher with considerable overlap from group to group. All ranges are moderate.

Figure 3-9

Ranges and Means of Comprehension Scores for Second Through Sixth Grade Readers

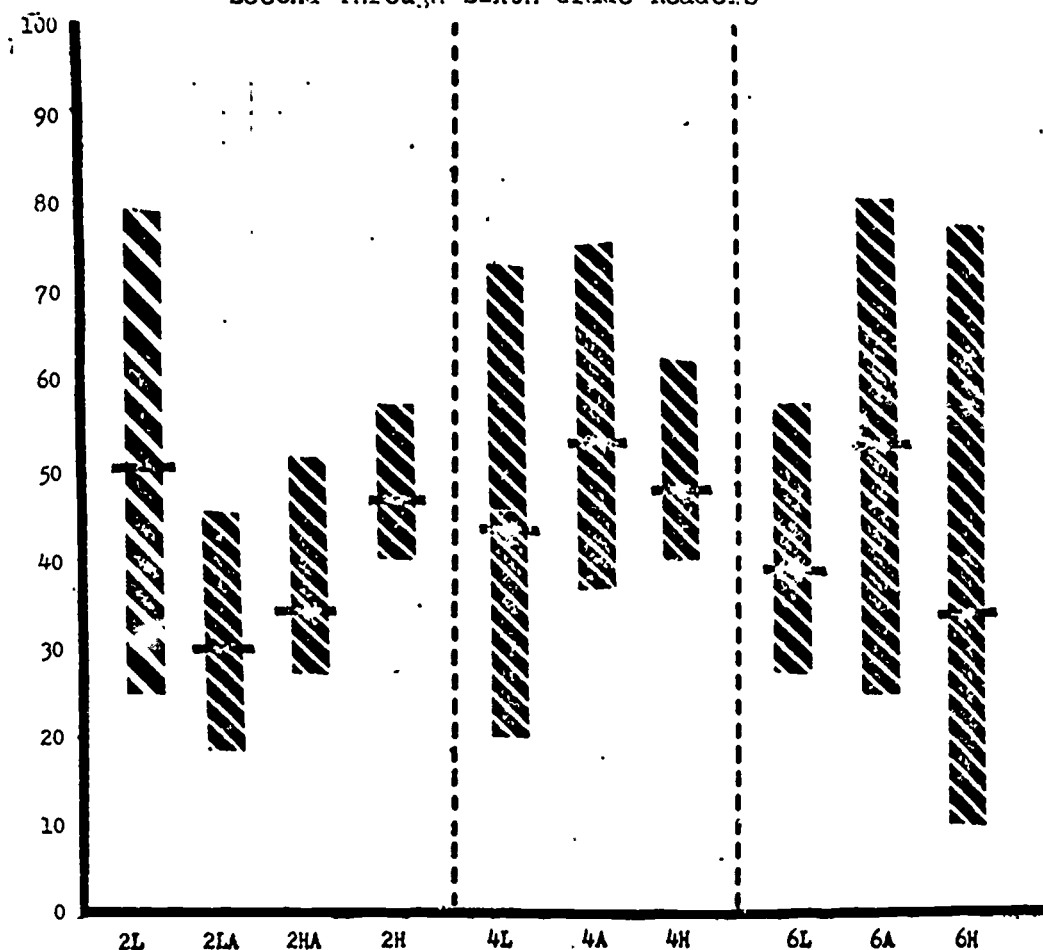
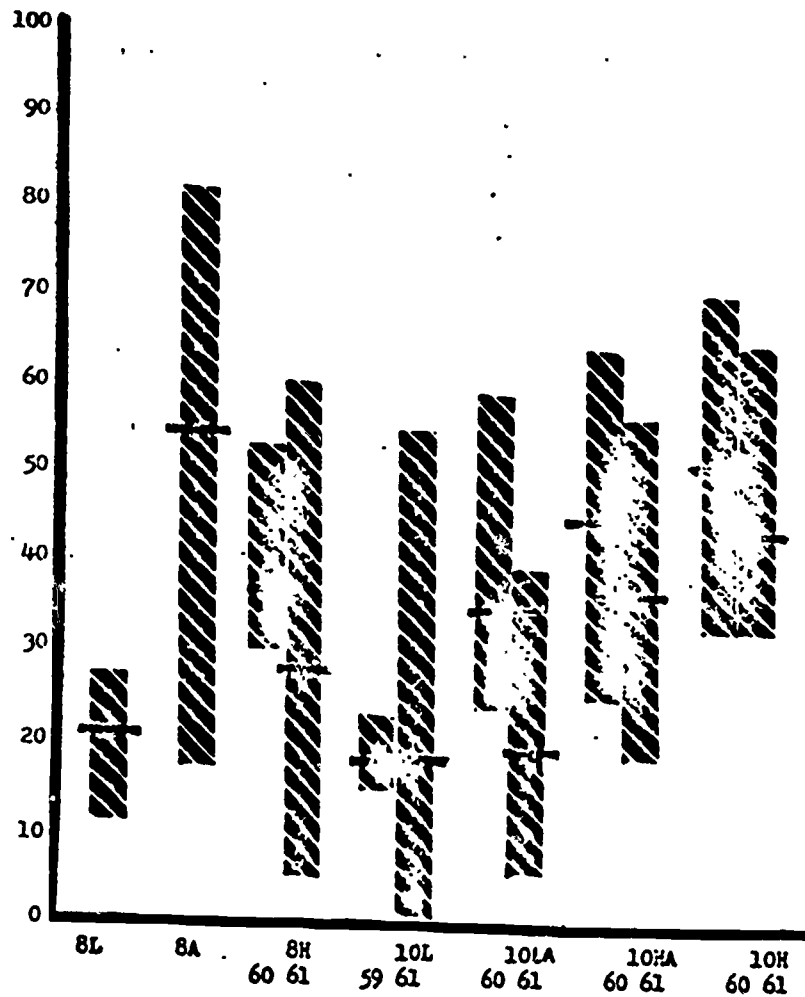




Figure 3-10

Ranges and Means of Comprehension Scores For  
Eighth and Tenth Grade Readers



The means for comprehension ratings for all three fourth-grade groups fall between 43 and 53, but the ranges are wider for less proficient groups. There is total overlap of each fourth-grade group's range by the next lower group.

The 6A and 6H groups have wide comprehension rating ranges. The means for high and low groups are similar but the average group mean is higher.

Figure 3-10 shows means and ranges for comprehension ratings among eighth and tenth-grade readers. Eighth and tenth-grade

low readers have similar low means (17 and 20), as do low-average readers on story 61. Average eighth-graders have a very wide range and the highest mean of any eighth or tenth-grade group. All groups have lower means and ranges on story 61 than on 60. The 10L group has a wide range on story 61 (0 to 55), largely because of one pupil whose rating was 55. The second highest score in the group is 18.

Mean and range for the tenth-grade groups are successively higher from one proficiency level to the next for both stories.

Figure 3-11 has comprehension rating comparisons of groups reading the same story. The 10L and 8L groups have low ranges and means for the stories they read. They fall considerably below lower grade readers with higher proficiency levels.

On story 59 the 8A group has a considerably higher mean than the 6H group. The 6A group has a slightly higher mean for comprehension on story 53 than the 4H group.

These comprehension patterns are roughly similar to the patterns for comprehending on the same stories (Figure 3-8), though the ranges are wider on comprehension for the high and average readers and on comprehending for the low readers.

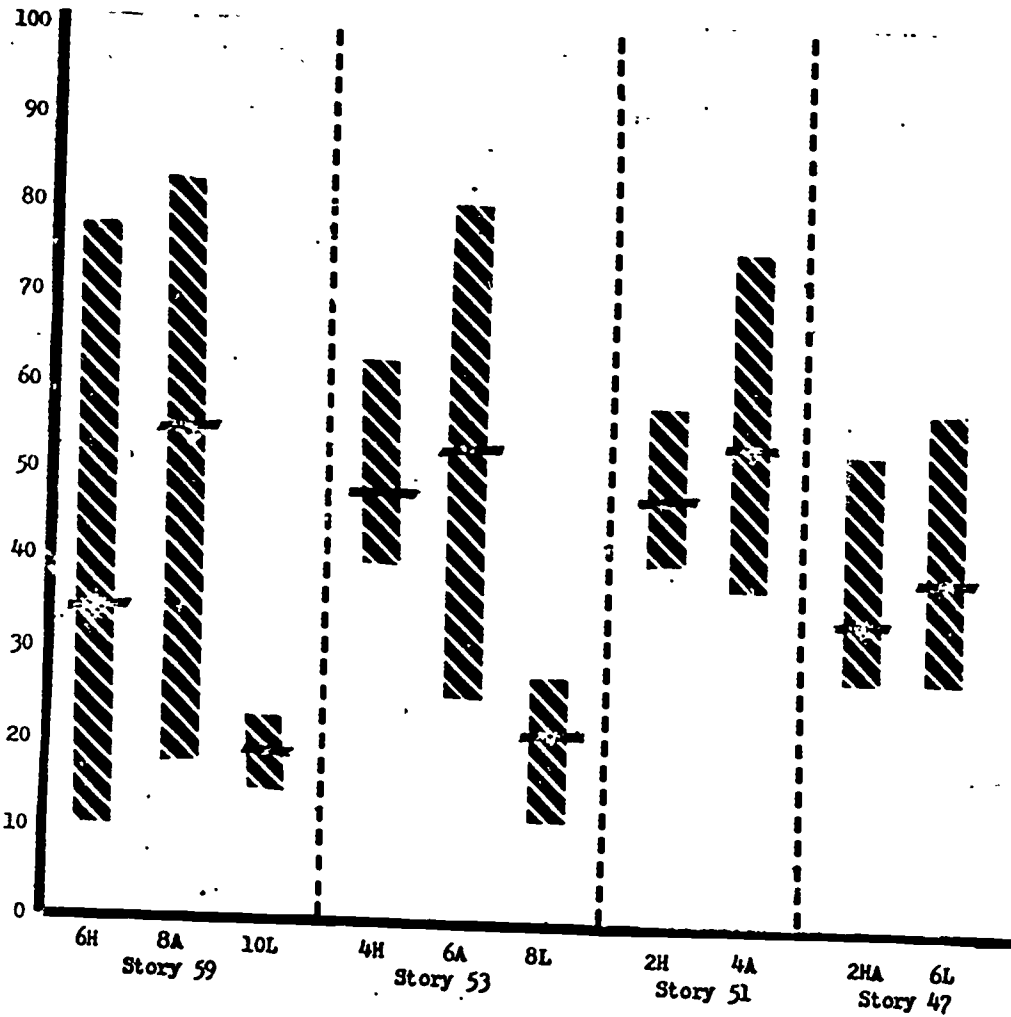
For the two groups each reading stories 51 and 47, ranges are narrower and more parallel on comprehension and means are closer together. Whereas the lower grade groups are higher in means on comprehending, the higher grade groups are higher in comprehension rating means which may reflect the wider experience of the more mature groups.

Tenth-grade readers of stories 60 and 61 show similar, successively higher means and ranges for story 61 in comprehending and comprehension, though the ranges overlap more in comprehension. On story 60 however, there is a similar staircase for comprehension whereas all groups have similar means for comprehending. This notable difference may reflect a greater ability on the part of more proficient readers to put the meaning they are acquiring into some usable cognitive framework, thus making it possible to generate retellings which show fuller comprehension.

We have some dissatisfactions with our comprehension rating, based as it is on an oral retelling. A key limiting factor is the willingness of a particular reader to express all that he has understood. We attempt to make up for this by careful, non-leading questioning, but we do not feel this was always done with uniform success. We do not feel that other post-reading performance tasks such as short answer questions would prove more reliable. Each post-reading task has its own limitations.

Figure 3-11

Ranges and Means of Comprehension Scores  
For Groups Reading The Same Story



Some Conclusions on Comprehending and Comprehension

Because comprehending is judged, in our studies, by the percent of miscues which do not produce unacceptable meaning (before or after correction), we feel that we are getting closer to comprehending with this measure of underlying reading competence, than with quantitative or post-reading judgments. At the points where comprehending patterns differ from RPIW patterns we feel that we are contrasting quality with quantity. We have moved from preoccupation with frequency-of-deviation to effectiveness of reading.

Though our comprehension rating is imperfect, it adds to the picture of the development of efficient and effective use of reading. Where comprehension differs in pattern from comprehending we seem to see a delineation between proficient reading and the use of that process to derive and demonstrate knowledge.

#### Residual MPHW: What's Left When the Good Miscues are Removed?

In examining reading as a process we use a quantity measure, MPHW, and we examine the quality of miscues by use of a comprehending score, the percent of miscues which are either originally semantically acceptable or corrected.

If MPHW are reduced by the comprehending score, a residual MPHW is produced. It represents the frequency of miscues which remain unacceptable and thus might interfere with the reader getting meaning from the passage. Figure 3-12 shows these relationships.

Residual MPHW falls below 1.00 for 4H, 8H on story 60; 10HA on 60, 10H on both 60 and 61. It is below 2.00 for 10HA on 61, 10LA on 60, 8A, 6H, 6A and 2H. Only two groups, 6L and 10L, have residual MPHW above 6.00. The latter group is just above 6.00 on story 59, but above 10.00 on story 61. The 6L group also has residual MPHW above 10.00.

In all groups there is an appreciable reduction of MPHW when miscues which do not disrupt meaning are subtracted. This, in itself, is interesting since it indicates that all groups show some ability to recover from significant miscues in order to construct meaning.

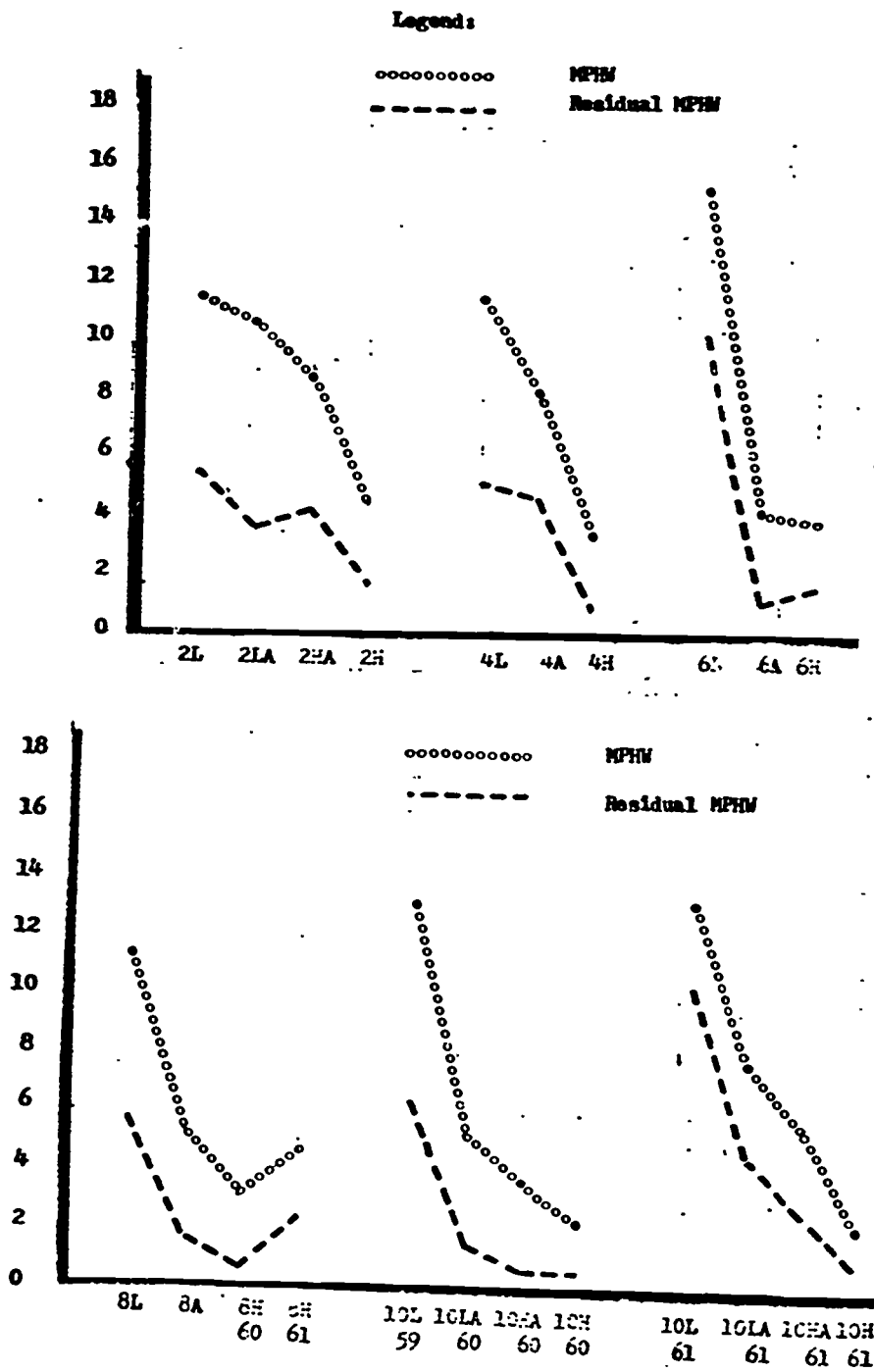
The contrast among eighth and tenth-graders between their reading of stories 60 and 61 shows in the following figures. All four groups reading story 60 score below 1.4 residual MPHW: 10LA, 1.4; 8H, .71; 10HA, .62; and 10H, .46. However, there is a sharp difference between groups reading story 61: 10L, 10.56; 10LA, 4.79; 10HA, 2.85; 8H, 2.21; and 10H, .98.

Just as there tends to be an inverse relationship between MPHW and comprehending, the difference between residual MPHW and MPHW tends to be proportionately greater for lower MPHW levels.

The patterns of residual MPHW reflect a much truer picture of the relationship between reading efficiency and reading effectiveness than the MPHW patterns do. The net effect of miscues can be seen as closely related to the relative effectiveness of readers, while the patterns of miscue quantity, quality, and correction indicate efficiency.

Figure 3-12

Means for MPH and Residual MPH



### Correction

Often when a subject has produced a miscue, he immediately or at some later point corrects his miscue. This is a very important part of the reading process, since correction shows that the reader (a) knows he has produced a miscue, (b) feels a need to correct, and (c) is able to correct, that is, to reprocess the information.

In the next chapter this phenomenon will be explored in detail to see when and why readers choose to correct. Here we will look at overall group figures.

Partials, oral reading utterances which are less than a full word, are not counted as miscues since counting them would require conjecture on the part of the researcher concerning the reader's intent. However, partials are a form of correction, one in which the reader recognizes a miscue and recovers before uttering a full word. For this reason, we have projected the percent of corrected miscues if partials had been counted as miscues.

Figure 3-13 shows percent of corrected miscues by groups. The table shows corrected miscues divided as to those that corrected semantically unacceptable miscues and those that corrected semantically acceptable ones. It also shows partials.

Only four groups have over 30% corrected miscues: 2H, 30.8%; 4L, 34.6%; 4H, 37.6%, and 10HA on story 60, 32.7%.

Low tenth-grade readers on story 61 fall slightly below 10%, though the same group, on story 59, are up to 16.5%.

On story 61, the mean percent corrected for each proficiency group in tenth-grade is in ascending order, though the latter three are very close: 10L, 8.9; 10LA, 21; 10HA, 21.7; 10H, 24.5. The 8H readers of this story corrected 15%.

All groups but 10H had a higher percent corrected for story 60 than for 61.

Corrections are lower for sixth and eighth-grade groups than for other grades (except 6A readers). Fourth-grade seems to be a peak point for high and low readers.

When partials are added, a number of groups reach 40% or more: 10H61, 10HA60 and 61, 10LA60, 6A, 4H, 4L, and 2H. The 4H readers hit 56%. Only four groups fall below 30%: 10L59 and 61, 8L, 6L. All are low groups. Grades two and four low readers may be using correction strategies which are inappropriate for the more complex material encountered by low readers in higher grades.

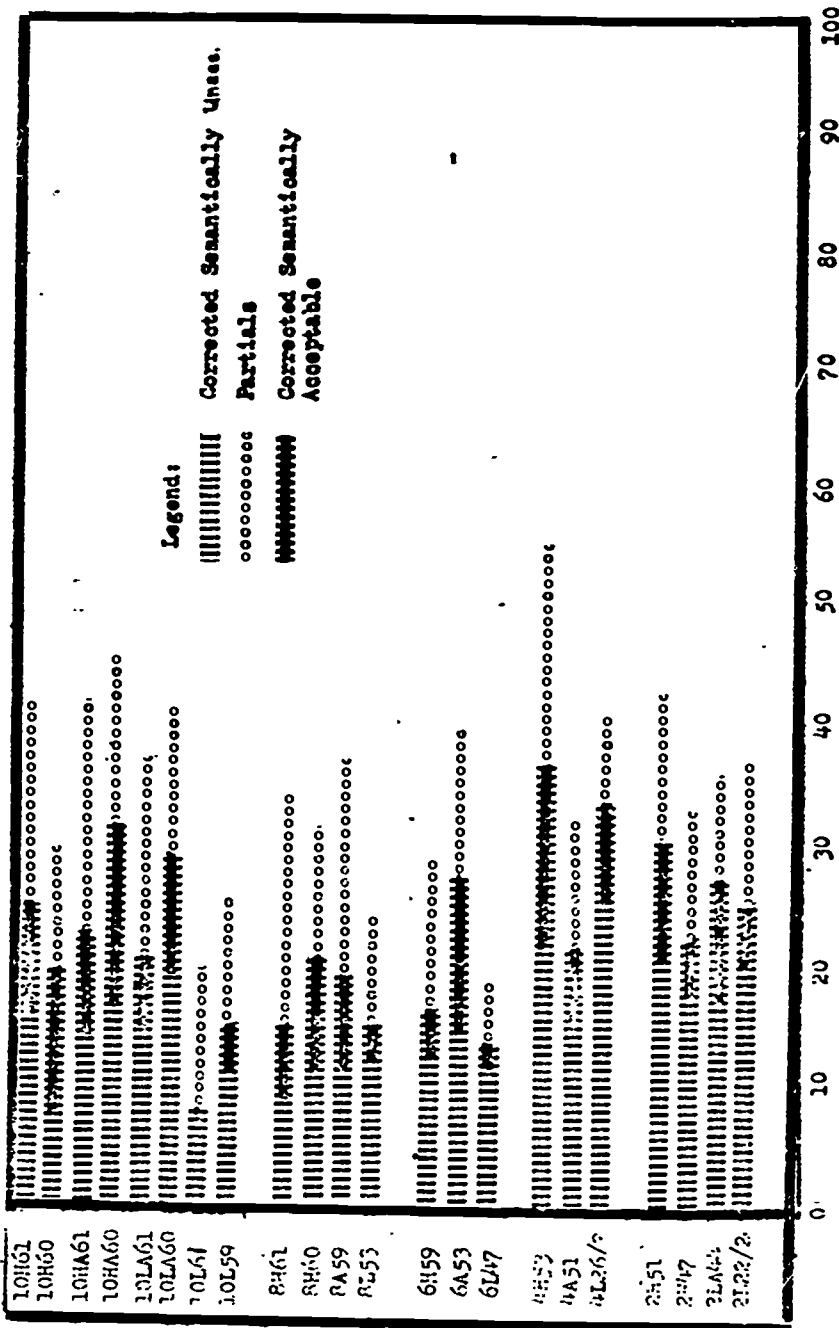
Groups with a relatively high proportion of partials to corrected miscues are: 10H61, 10HA61, 10LA61, 10L61, 10L59,

8H61, 8A59, 8L53 and 6H59. At this point there is a separation between older and younger readers on the relative importance of the partial phenomenon. This may be a function of story difficulty since no group reading story 60 has such high proportions.

Low readers at all grade levels produce fewer corrections on miscues that are semantically acceptable. This could reflect a relatively low percent of all miscues that are semantically acceptable.

Figure 3-13

Mean Corrections and Partials





Readers within each group vary considerably in the percent of miscues corrected (Figure 3-14). Eighth-grade groups are most uniform in their ranges. Second-grade groups have uniform ranges except the high-average which has a narrower range and a lower top. Average sixth-graders have a higher range than other sixth-grade groups. Average fourth-graders have a lower range than other fourth-grade groups.

High and high-average tenth-graders have wider ranges on 61 than on 60. Low-average and low readers have wider, higher ranges on 60 and 59 respectively than on 61.

Efficient, effective readers should produce relatively small numbers of miscues which need correction because they produce unacceptable meaning. Such readers should correct a relatively high percentage of those miscues that need correction. Efficient readers theoretically, should not correct miscues which do not need correction. The correction patterns our subjects produce do not seem to fit neatly with these basic predictions. The factors involved in correction appear therefore, to be so complex that they produce a kind of leveling off so that correction rarely involves even half the miscues. (Individual subjects in groups 2L, 2H, 4L, and 10LA reach 50% correction.) Furthermore in oral reading, pupils may correct when they do not need to for the sake of oral accuracy, and they may not correct when they need to for the sake of economy of effort.

In the next chapter we explore in greater detail what gets corrected.

#### Syntactic and Semantic Acceptability

Miscues may be syntactically acceptable but not semantically acceptable within the reader's dialect. The reverse is never true. In language one can have grammatical nonsense, but one cannot express meaning without grammar. There is, of course, the possibility that one can understand a sentence which is not syntactically acceptable to some extent. We have no way of judging when this might occur. We therefore consistently class all syntactically unacceptable miscues as semantically unacceptable.

Acceptability is judged in the sentence and/or passage which includes all uncorrected miscues. Multiple miscues in the same sentence do, therefore, influence each other's acceptability.

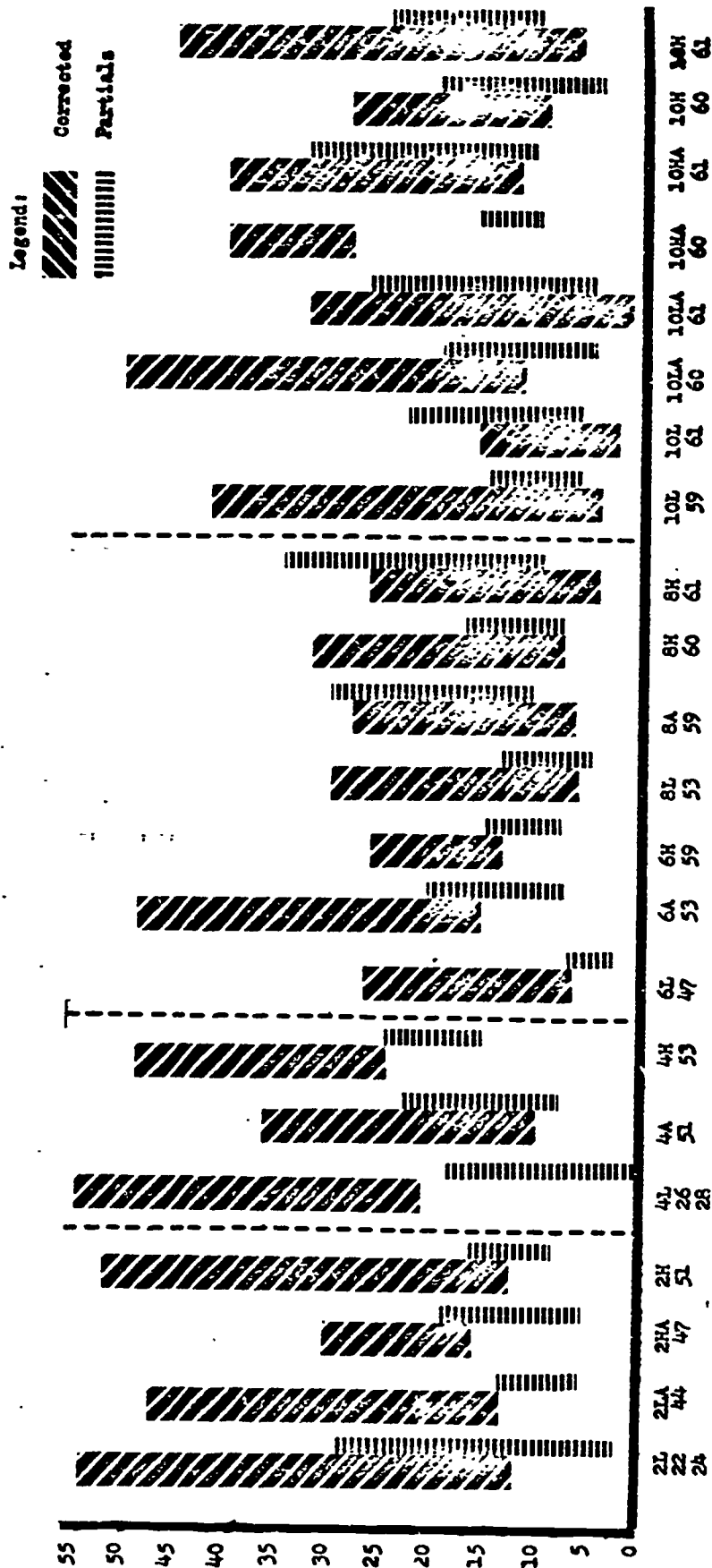
Figures 3-15 and 3-16 show the ranges and means for all groups for both these variables.

In general, means for semantic acceptability remain 15% to 20% below syntactic acceptability means. For the tenth-grade readers on story 60 the means are progressively closer together from 10LA to 10HA to 10H. There is no similar moving together on story 61 and, in fact, the difference is over 20% for all



Figure 3-14

Ranges of Miscues Corrected and Partials



groups on that story. Tenth-grade groups with the exception of 10HA and 10H, have means for syntactic acceptability which are higher than less proficient groups on the same story. Means for syntactic acceptability for the groups reading story 60 all fall between 73% and 80%. Semantic acceptability means on the same story are between 65% and 70%, except for 10LA which drops to 56%.

Ranges are generally wider and lower on story 61. Differences between groups are also greater, except for 10LA and 10HA groups which have similar means for semantic acceptability.

Eighth-grade readers show a stair step pattern as proficiency increases. Means dip lower and range more widely for the 8H group reading story 61 than for their reading of story 60.

Figure 3-15

Ranges and Means of Syntactic and Semantic Acceptability  
For Second Through Sixth Grade Readers

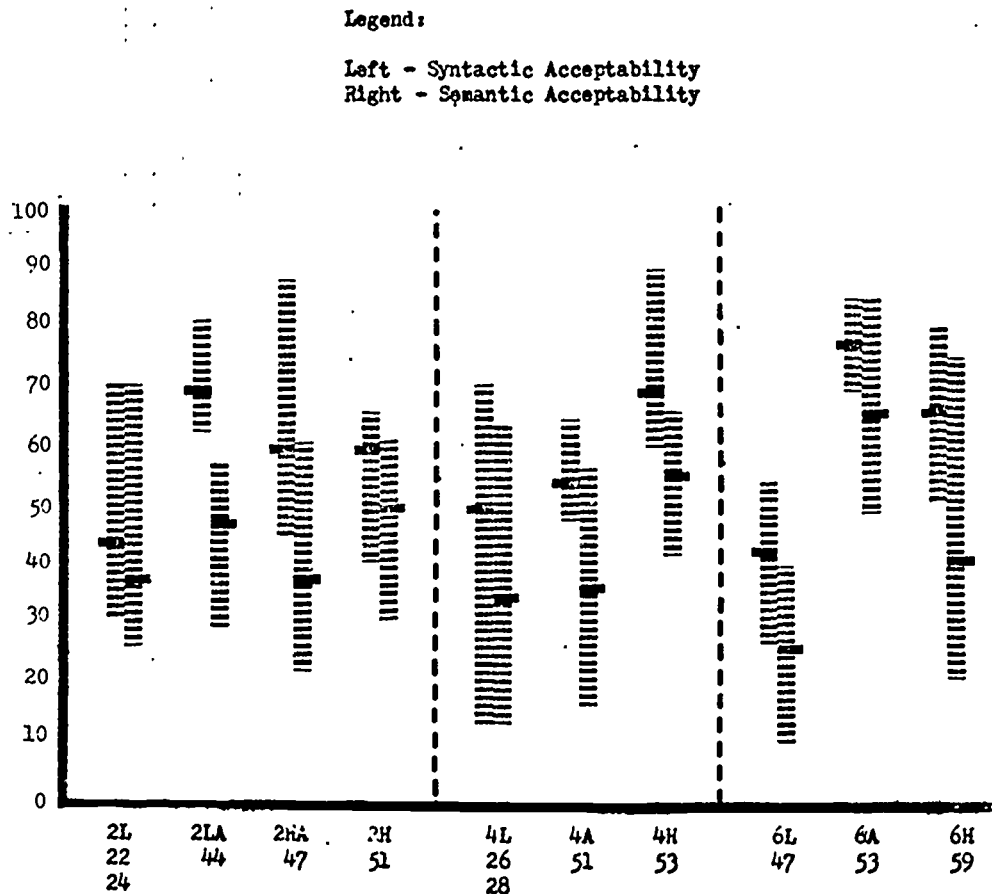
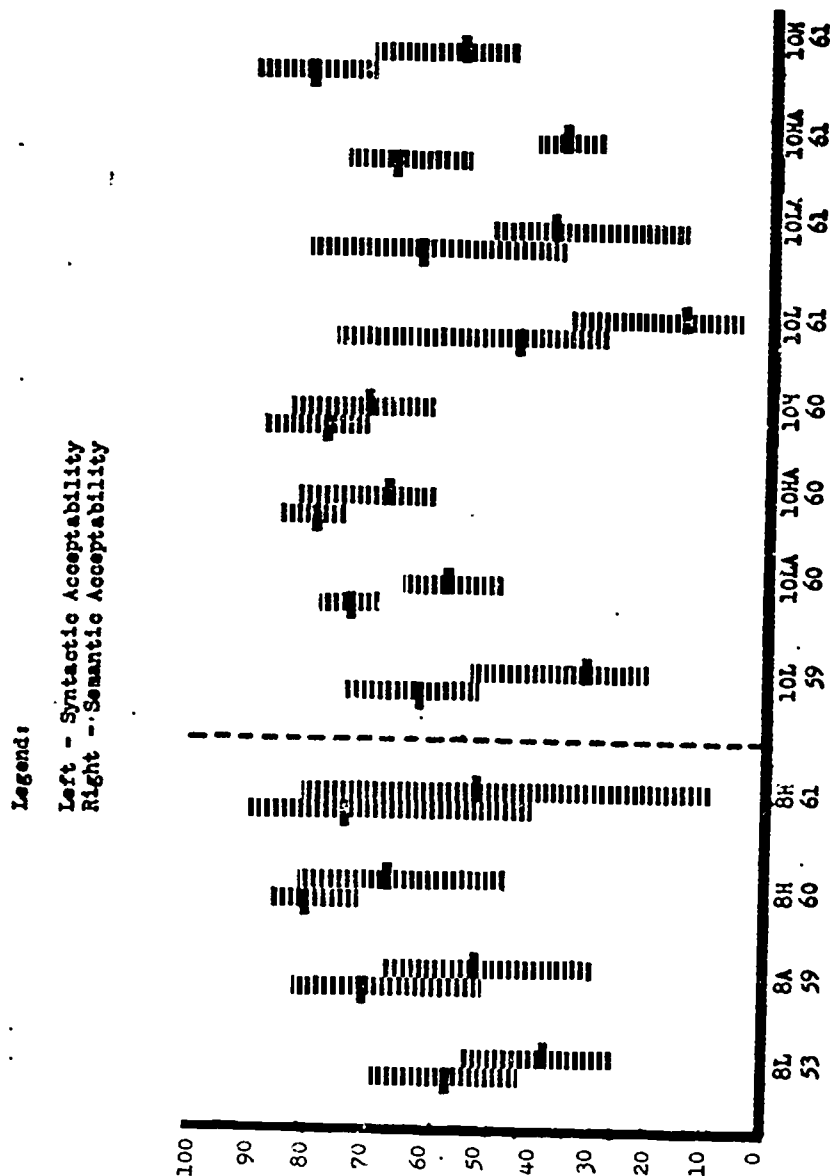


Figure 3-16  
 Ranges and Means of Syntactic and Semantic Acceptability  
 For Eighth and Tenth Grade Readers



Average sixth-graders have substantially higher acceptability means than 6H readers. Low sixth-graders are quite a bit below the latter in range and means. Means for 4A readers are only slightly higher than 4L readers while 4H readers have considerably higher means.

Low-average second-graders have a mean of 70% syntactic acceptability, well above the 59% mean for both high-average and high second-grade groups. In semantic acceptability the low-average second-graders fall below the high group (46% as compared to 49%), but remain above the high-average group (37%).

Among all low groups there are the following means:

Table 3-1 Low Group Means (Percent)

Group	2	4	6	8	10(59)	10(61)
syntactic acceptability	44	47	42	55	61	44
semantic acceptability	37	34	26	38	31	14

As can be seen, syntactic acceptability varies more than semantic acceptability. Low eighth and tenth-grade readers handle syntax information better than younger, low readers. However, the older, low readers have semantic acceptability levels that are similar to those of the younger, low readers.

Table 3-2 Average Group Means (Percent)

Group	2LA	2HA	4A	6A	8A	10LA60/61	10HA60/61
syntactic accept.	69	59	54	77	69	73 - 61	79 - 66
semantic accept.	47	37	36	66	51	56 - 38	66 - 36

Means of the average groups vary more, in both categories, than the means of the low groups; generally starting where low groups terminate. Higher grades tend toward higher means.

Table 3-3 High Group Means (Percent)

Group	2H	4H	6H	8H60	8H61	10H60	10H61
syntactic accept.	59	69	66	79	74	76	80
semantic accept.	49	55	41	66	51	70	54

All subjects at all grades and levels produce syntactically and semantically acceptable miscues, though their abilities to do so varies. It would appear that variation in story difficulty has an effect on both variables, but semantic acceptability is more seriously affected by increased difficulty. Semantic acceptability could be an important single indicator of proficiency in reading.

#### Graphic and Phonemic Proximity

When a miscue involves the substitution of one word for another, the graphic and phonemic likenesses of those two are compared. The degree of proximity between the expected response and the observed response is determined, using a scale from zero to nine. Zero represents no graphic or phonemic similarity; nine represents the case of a homograph or a homophone. A mean proximity score is then calculated for each subject. Since

dialect variations which are purely a difference in sound are not counted as miscues in this research. We are concerned only with those dialect miscues which involve syntax or a lexical preference. In dialect miscues such as these the miscue is always coded as a homograph:

When the scales start falling from their eyes,...

...I switched off the head lamps of the car...

We assume that the graphic form for the ER and the dialect OR are the same. Spelling is constant across dialects.

The two systems are closely related yet quite distinct from each other. The graphic and phonemic proximities of single miscues may be quite different. Regularity of phoneme and grapheme correspondences is shown in these examples:

OR	weakened	\$precautious	vindicate
ER	widened	precarious	vegetate

The letters at the beginning and end of each pair are the same as are the sounds they represent. The graphic and phonemic proximities, then, are also equal on the coding sheet.

The two examples which follow, however, demonstrate how dissimilar the proximities may be:

OR	slaving	\$crica
ER	shaving	circa

There is only a one letter difference between slaving and shaving, making the graphic proximity very high. The phonemic proximity of the two items, however, is lower, since the initial sounds are dissimilar. Only the middles and the ends of the words have the same phonemes.

The second example presents a more striking contrast. Although all the letters are identical and just two letters have been reversed, only the final ca sounds the same in both words.

Since the written English language does not have a perfectly regular correspondence of one sound for one symbol, but rather operates with patterns of phonemes and graphemes, it is easy to see how the phonemic and graphic means might look different from one another.

Readers rely more heavily upon the graphic system than the phonemic one because reading is interaction with graphic symbols. There are a few instances of miscues where the sound correspondence is higher than the correspondence of print; in general this occurs when the reader is attending neither to sound nor to print, but instead to the grammar and the meaning of the sentence.

A frequent substitution is that of the article the for a, or the reverse. Preceding a consonant, these two terminate in the same phoneme, yet the two words have no graphemes in common. Another example is the substitution of minute for moment. The phonemic proximity is higher than the graphic because the initial and final sounds are the same, whereas the final letters are not. The reader is attending to the meaning of the message, "Wait a moment," and makes a reasonable substitution.

As Figures 3-17 and 3-18 show, phonemic means are consistently lower than the graphic means, though the difference is never great. There are, among all the grade levels and their various ranks, only three exceptions to this:

Table 3-4 Exceptional Phonemic Exceeds Graphic

<u>Group</u>	<u>Story</u>	<u>Graphic Mean</u>	<u>Phonemic</u>	<u>Difference</u>
10H	60	4.76	4.78	.02
8H	61	5.52	5.53	.01
8H	60	4.86	4.99	.13

In each case, the phonemic mean is only a few hundredths of a point above the graphic mean. Some subjects in other groups show phonemic means slightly higher than the graphic ones, but these individuals are few.

#### Means Across Grade Levels

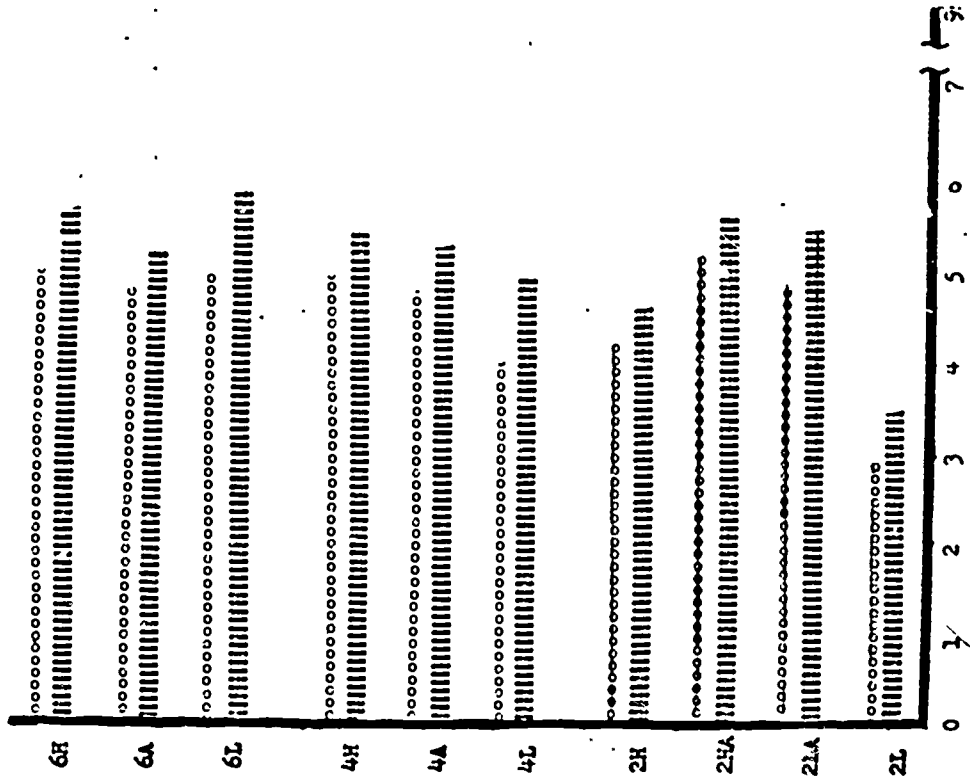
Graphic and phonemic means are similar across levels, with the exceptions of the 2L readers and some individuals among the 4L readers. This relative flatness across both grade level and rank, is in contrast to the divergent patterns made by these readers on other variables of the study, for example, syntactic and semantic acceptability.

The 2L readers have appreciably lower means on both variables than the other readers (3-17). But other second-grade groups and groups in other grades show a leveling off. Readers in tenth-grade do not seem to rely more heavily upon graphic cues than 60 readers of age nine or eleven.

Figures 3-17 and 3-18 indicate the graphic and phonemic means attained by each grade level. They reveal the similarity of the graphic and phonemic means across the ranks within each grade level, apart from the 2L group previously mentioned. This closeness in scores is particularly remarkable since one might have assumed that highly proficient readers within each grade would attain higher graphic and phonemic proximities. This is, quite obviously, not at all the case. In fact, the low readers

Figure 3-17

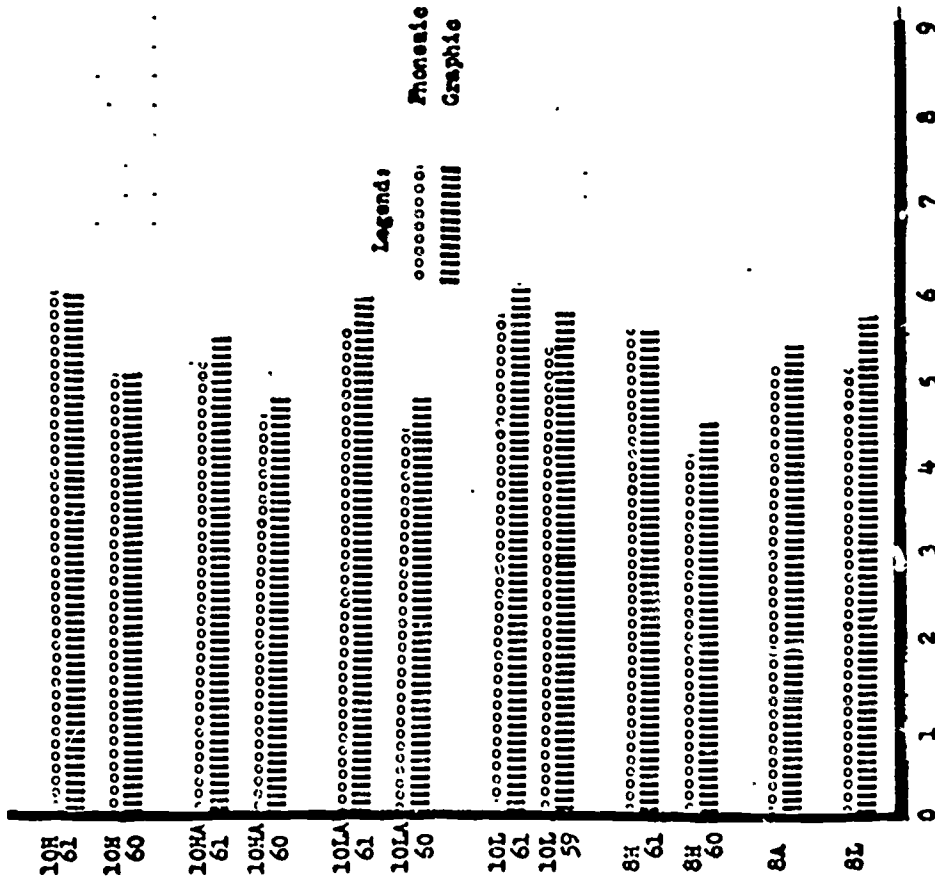
Graphic and Phonemic Means For Second Through Sixth Grade Readers



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Figure 3-18

Graphic and Phonemic Means For Eighth and Tenth Grade Readers



Legend:

Phonemic  
Graphic



in eighth and tenth-grades make higher scores than the average or high readers. Individual readers producing the highest graphic proximities are in 8L, 4L, and 6L; their scores are 7.4, 7.2, and 7.0 respectively.

As was mentioned, the low second-grade group shows the only distinctively low pattern for any group in any grade (Figure 3-17). They do, in fact, have means low enough that one could conclude that a fairly high numl. of their substitutions have little or no resemblance either to the sound or shape of the ER word. However, even the 2LA group has means well within the narrow range of most other groups. The 2H group has means below the 2LA and 2HA groups and their means are relatively low as compared to other groups. Their performance on a number of variables exceeds that of the 4A group who read the same story. Thus the somewhat lower scores may represent effective performance for the high group. These differences are explored in more detail in Chapter 4.

Means for fourth-grade are relatively close, particularly for graphic proximity. The 4L group is notably lower than the 4A or 4H groups in its phonemic mean, but, both its phonemic and graphemic means are much higher than the 2L group means.

Among sixth-grade groups there is little difference in either variable. The 6L group shows greatest difference between graphic and phonemic means mainly because of a relatively high graphic mean (5.9).

Figure 3-18 shows eighth and tenth-grade readers. The means for the 8L and 8A and for the 10L on both stories they read, fall within the same narrow range as most groups in second, fourth, and sixth-grades. All groups that read story 61 also score within this same range, with very narrow differences between phonemic and graphic means. All groups on story 60 (8H, 10LA, 10HA, 10H) have means almost a full point lower. The means of twenty of twenty-one subjects who read both 60 and 61 are higher on 61.

There is an easily identifiable reason for this consistently sharp difference which Table 3-5 can make clear.

Table 3-5 Percent of Non-Words for Stories 60 and 61

Group	8H	10L	10LA	10HA	10H
Story 60	6.9	-	7.1	5.9	3.8
Story 61	23.8	32.4	26.0	21.3	19.7

In story 61 the readers encounter many more unfamiliar words in contexts which are complex and in which it is hard to derive deep structure and meaning. In those cases they come up with graphically and phonemically close non-words. This in itself is



not remarkable. What is noteworthy is that all groups are about equally successful in producing such high graphic and phonemic proximity. Differences in ability to use "phonics" apparently do not exist among these readers of considerably varied proficiency. They do show decreasing percentage of non-words as proficiency increases but this is not a function of "word attack skill." They do not have difficulty because they produce non-words; they produce non-words because they have difficulty.

These figures show only first attempts since additional attempts at the same occurrence or subsequent occurrences of a word are not coded as miscues. It is, however, the less proficient tenth-graders who show perseverance, frequently keeping at a word for five or six tries until they are satisfied. High readers will make one try and go on, confident that if it is important it will come up again.

Average readers in grades two through eight show remarkably similar means for both variables. The 10LA and 10HA groups have somewhat lower means for story 60 but are back up on story 61.

Low readers in grades six, eight, and ten have very similar means. As reported earlier, 4L has somewhat lower and 2L has considerably lower means. These figures take on more meaning if we consider word omissions and non-word substitutions for low readers:

Table 3-6 Percent of Omissions and Non-Words by Low Readers

Grade	2L	4L	6L	8L	10L59	10L61
Omissions	20.5	16.5	10.6	10.7	6.4	9.5
Non-words	2.4	4.3	8.4	9.8	16.8	32.4

Table 3-6 indicates that word omissions level off among low readers above grade four, while percent of non-words steadily increases. Low second-graders and to a lesser extent low fourth-graders show a strong tendency to omit rather than generate non-words. Such intentional omissions are in contrast to the unintentional omissions produced by all readers. These low readers substitute less often, but when they do their substitutions tend to be real words which may be less graphically and phonemically similar to the text word.

Among high readers, those in fourth and sixth-grades have graphic and phonemic proximity means that are similar to average and low readers in the same grades; whereas, those in grades two, eight, and ten (the last two on story 60) have lower means. The means for 8H and 10H on story 61 are up with the 4H and 6H groups.

Above we pointed out that all groups reading story 61 have similar means on both variables as do groups reading story 60.

Among the three groups (10L, 8A, 6H) reading story 59 there is little variation in means on graphic and phonemic proximity.

The same pattern is true for groups 8L, 6A, and 4H reading story 53.

Story 47 was read by 6L and 2HA groups with little difference in means. The lower grade group appears to be superior in a number of other variables. The 2H group which appears to read story 51 with greater proficiency than the 4A group has somewhat lower means on graphic and phonemic proximity than the 4A group.

In summation, it appears that only the 2L group shows any definite evidence of inability or lack of confidence in using grapho-phonetic information in reading. The 4L group shows more moderate tendencies. In this research there is little evidence to support the idea that "phonics" problems are of any great importance in differentiating readers of varied proficiency.

#### Correlations

Pearson Product-Moment correlations have been calculated for the variables discussed in this chapter for all useful groupings of subjects. These correlations can be used to supplement the information already reported. They need to be carefully considered in the light of that data.

Since the tenth-grade study has subjects of varying levels of proficiency reading the same stories, correlations of variables in all tenth-grade readings provide some insights into the tendencies as difficulty apparently increases. All tenth-grade subjects read stories 60 and 61, except the low group who read 61 and 59 (an eighth grade anthology story). Story 61 (a magazine opinion essay) was, as demonstrated above, harder for all subjects than were stories 60 and 59.

There were twenty tenth-grade subjects each reading two stories, so for correlation purposes there is an N of 40. Table 3-7 shows the significant Pearson Correlations for all these tenth-grade readers.

Comprehending (percent semantically acceptable plus percent unacceptable but corrected) has correlations significant at the 1% to .1% level with all variables except semantic proximity. Positive correlations were found with percent semantically acceptable (.96), percent syntactically acceptable (.81), percent corrected (.67), comprehension ratings (.50), and percent semantically unacceptable but corrected (.46). Since comprehending is a composite of the percent semantically acceptable and

TABLE 3-7 SIGNIFICANT PEARSON CORRELATIONS FOR  
Tenth-Grade Readers

	sig. <sup>†</sup>	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION		-.40 .01	-.35 .02	NS	.54 .001	NS	-.38 .01	-.37 .02	.50 .001	.47 .002	NS
GRAPHIC PROXIMITY			.92 .001	-.45 .003	-.56 .001	NS	.69 .001	.30 .06	-.57 .001	-.45 .003	NS
PHONEMIC PROXIMITY				-.42 .006	-.47 .002	NS	.60 .001	NS	-.48 .001	-.36 .02	-.33 .04
% CORRECTED					.46 .003	.85 .001	-.53 .001	-.59 .001	.67 .001	.45 .004	NS
SEMANTIC ACCEPTABILITY						NS	-.72 .001	-.81 .001	.96 .001	.84 .001	NS
SEMANTICALLY UNACCEPT. BUT CORRECTED							-.35 .03	-.41 .008	.46 .003	NS	NS
SYNTACTIC PROXIMITY								.59 .001	-.76 .001	-.55 .001	NS
M.P.H.W.									-.86 .001	-.80 .001	NS
COMPREHENDING										.81 .001	NS
SYNTACTIC ACCEPTABILITY											NS

the percent semantically unacceptable but corrected, the high  $r$  for semantically acceptable indicates that it varies among readers far more than percent unacceptable but corrected.

No significant correlation is found between these latter two variables.

Negative correlations with comprehending are found for miscues per hundred words (-.86), syntactic proximity (-.76), graphic proximity (-.57) and phonemic proximity (-.48).

The inverse relationship between number of miscues and comprehending is not surprising. More proficient readers make fewer and better miscues. The inverse relationship with syntactic, graphic, and phonemic proximity is perhaps less predictable. It shows a tendency to read with more superficial accuracy as the semantic going gets rougher.

Comprehension (rating on the retelling) shows moderate positive correlations (sig. at .001 level) with semantic acceptability (.54), and syntactic acceptability (.47) in addition to comprehending.

Significant negative correlations are more moderate: graphic proximity (-.40), phonemic proximity (-.35), syntactic proximity (-.38), MPH (-.37). Again the inference may be drawn that though comprehension increases somewhat as miscues decrease, approximation to the surface aspects of the text increase as comprehension decreases.

Among these varied tenth-grade readers, percent of miscues corrected correlates positively (sig. at .004 or better) with the percent semantically unacceptable but corrected (.85), syntactic acceptability (.45) and semantic acceptability (.46) in addition to comprehending. The high correlation with percent semantically acceptable but corrected is best understood by considering the question discussed elsewhere (p. 20) of the ratio of miscues corrected which did or did not need correction. It is worth noting that neither correction nor percent semantically unacceptable but corrected shows any significant correlation with comprehension.

Correction correlates negatively with MPH (-.59), syntactic proximity (-.53), graphic proximity (-.45), phonemic proximity (-.42), (sig. at level .01).

The correlations demonstrate a moderate tendency for percent of corrections to increase as quality of miscues increases and quantity decreases.

Readers with less correction have higher correspondence phonemically, graphically, and syntactically to the expected responses. But it must be remembered that the latter also

correlates negatively with comprehension and comprehending.

Since semantic acceptability is dependent on syntactic acceptability it is not surprising that these variables have a high positive correlation (.84). They have similar relationships to other variables such as comprehension (semantic .54, syntactic .47), correction (.46, .45), comprehending (.96, .81), graphic (-.56, -.45), phonemic (-.47, -.36), syntactic proximity (-.72, -.55), MPHW (-.81, -.80).

Again the inverse relationship between quality and quantity shows here. Semantic acceptability of miscues emerges as the single best predictor of success in comprehending and comprehension.

There are fewer significant correlations for these variables when all readings of story 60 (Table 3-8) and all readings of story 61 (Table 3-9) are examined separately. (These include 8H readers.)

Comprehension rating shows no significant correlations. Comprehending shows positive correlations for both stories with semantic acceptability (60: .89, 61: .94) and syntactic acceptability (60: .57, 61: .77). On story 61, comprehending shows a correlation of .54 with percent corrected and .40 with semantically unacceptable but corrected. Negative correlations for comprehending, on both stories, emerge for MPHW (-.47, -.83) and syntactic proximity (-.39, -.71).

Percent corrected shows additional positive correlations for both stories on semantically unacceptable but corrected (60: .74, 61: .88). There is a correlation of .36 with syntactic acceptability on story 61.

There are no negative correlations on both stories for percent corrected. On story 60, percent corrected shows negative correlations with phonemic proximity (-.43), syntactic proximity (-.44) and semantic proximity (-.57). On story 61 there is a -.43 correlation with MPHW.

These correction patterns are interesting. On the less difficult story (60) correction varies inversely with accuracy factors: phonemic, syntactic, semantic proximity. On the more difficult story (61) correction correlates positively with comprehending and syntactic acceptability and there is an inverse relationship to MPHW.

Semantic and syntactic acceptability correlate positively on both stories (.77 and .83). They correlate with comprehending as reported above though the correlations are higher for 61 than 60. Both correlate negatively with MPHW on both stories: semantic acceptability and MPHW -.44, -.80; syntactic acceptability and MPHW -.57, -.79. These are again higher for 61 than 60. Quantity goes up as quality declines with a much sharper relation-

TABLE 3-8 SIGNIFICANT PEARSON CORRELATIONS FOR  
STORY 60

	sig. <sup>r</sup> GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
GRAPHIC PROXIMITY		.77 .001	NS	NS	NS	.67 .001	NS	NS	NS	NS
PHONEMIC PROXIMITY			-.43 .05	NS	NS	.54 .01	NS	NS	NS	NS
% CORRECTED				NS	.74 .001	-.44 .04	NS	NS	NS	-.57 .007
SEMANTIC ACCEPTABILITY					-.46 .04	NS	-.44 .04	.89 .001	.77 .001	NS
SEMANTICALLY UNACCEPT. BUT CORRECTED						NS	NS	NS	-.51 .02	NS
SYNTACTIC PROXIMITY							NS	-.39 .07	NS	.43 .05
M.P.H.W.								-.47 .03	-.57 .007	NS
COMPREHENDING									.62 .003	NS
SYNTACTIC ACCEPTABILITY										NS

TABLE 3-9 SIGNIFICANT PEARSON CORRELATIONS FOR  
STORY 61

	sig. <sup>H</sup>	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
GRAPHIC PROXIMITY		.87 .001	NS	NS	NS	NS	.37 .06	NS	NS	NS	NS
PHONEMIC PROXIMITY				NS	NS	NS	NS	NS	NS	NS	NS
% CORRECTED					NS	.88 .001	NS	-.43 .03	.54 .004	.36 .07	NS
SEMANTIC ACCEPTABILITY						NS	-.70 .001	-.80 .001	.94 .001	.83 .001	NS
SEMANTICALLY UNACCEPT. BUT CORRECTED							NS	NS	.40 .04	NS	NS
SYNTACTIC PROXIMITY								.44 .03	-.71 .001	-.57 .008	NS
M.P.H.W.									-.83 .001	-.79 .001	NS
COMPREHENDING										.79 .001	NS
SYNTACTIC ACCEPTABILITY											NS

TABLE 3-10 SIGNIFICANT PEARSON CORRELATIONS FOR  
Eighth Grade Readers on Stories 53, 59 and 60

	sig. <sup>r</sup> GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	NS	NS	NS	NS	NS	NS	.59 .01	NS
GRAPHIC PROXIMITY		.90 .001	NS	NS	NS	.58 .01	NS	NS	NS	NS
PHONEMIC PROXIMITY			-.48 .04	NS	NS	.67 .002	NS	NS	NS	NS
% CORRECTED				.45 .06	.83 .001	NS	NS	.65 .004	NS	NS
SEMANTIC ACCEPTABILITY					NS	NS	NS	.96 .001	.85 .001	.51 .03
SEMANTICALLY UNACCEPT. BUT CORRECTED						NS	NS	NS	NS	NS
SYNTACTIC PROXIMITY							NS	NS	NS	NS
M.P.H.W.								NS	-.48 .04	NS
COMPREHENDING									.78 .001	NS
SYNTACTIC ACCEPTABILITY										.45 .05



TABLE 3-11 SIGNIFICANT PEARSON CORRELATIONS FOR  
Sixth Grade Readers

	sig. <sup>r</sup>	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	NS	.61 .002	NS	-.45 .03	-.37 .08	.60 .003	.50 .02	NS	
GRAPHIC PROXIMITY		.96 .001	-.65 .001	-.39 .06	NS	.38 .08	NS	-.46 .03	NS	NS	
PHONEMIC PROXIMITY			-.60 .002	NS	NS	NS	NS	-.37 .08	NS	NS	
% CORRECTED				.49 .02	.39 .06	NS	-.45 .03	.56 .005	.40 .05	NS	
SEMANTIC ACCEPTABILITY					NS	-.60 .002	-.81 .001	.98 .001	.93 .001	.46 .03	
SEMANTICALLY UNACCEPT. BUT CORRECTED						-.40 .06	NS	NS	NS	NS	
SYNTACTIC PROXIMITY							.52 .01	-.67 .001	-.44 .03	-.53 .009	
M.P.H.W.								-.84 .001	-.87 .001	-.49 .02	
COMPREHENDING									.89 .001	.49 .02	
SYNTACTIC ACCEPTABILITY										.49 .02	

ship on the harder reading task.

Graphic and phonemic proximity have an  $r$  of .77 on 60 and an  $r$  of .87 on 61 (probably due to a higher proportion of non-word substitutions in reading the latter story). Both correlate with syntactic proximity in story 60: graphic (.67), phonemic (.54). There is a .37 correlation between graphic and syntactic proximity on story 61. Semantic and syntactic proximity have .43 correlation on story 60.

Table 3-10 shows correlations for eighth-grade readers, excluding the high group reading story 61. The low group is reading story 53 (sixth-grade reading book). The average group is reading 59 (eighth-grade reading book). The high group reads story 60.

Comprehension correlates significantly only with syntactic acceptability (.59). With an  $N$  of 18 all correlations below .45 are not significant at the .06 level or better.

Comprehending shows positive correlations with semantic acceptability (.96), syntactic acceptability (.78) and percent corrected (.65).

Percent corrected shows an additional positive correlation with semantic acceptability and a negative correlation with phonemic proximity.

Semantic and syntactic acceptability have a correlation of .85. Both correlate with semantic proximity (.51, .45). Syntactic acceptability has an  $r$  of -.48 with MPHW.

Graphic and phonemic proximity show an  $r$  of .90. Both correlate with syntactic proximity (.58, .67).

Except for the correlations of syntactic and semantic acceptability with semantic proximity, these correlations are consistent with tenth-grade groups.

For all sixth-grade subjects there are a number of significant correlations (Table 3-11).

Comprehension has positive correlations with comprehending (.60), semantic acceptability (.61) and syntactic acceptability (.50). It shows negative correlations with syntactic proximity (-.45) and MPHW (-.32, but at the .08 level of significance).

Comprehending has positive correlations with semantic acceptability (.98), syntactic acceptability (.89), correction (.56) and semantic proximity (.49). There are negative correlations with MPHW (-.84), syntactic proximity (-.67) and graphic proximity (-.46).

TABLE 3-12 SIGNIFICANT PEARSON CORRELATIONS FOR  
Fourth Grade Readers

	sig. <sup>H</sup> GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
GRAPHIC PROXIMITY		.87 .001	NS	.49 .01	NS	NS	-.50 .01	.42 .04	.45 .03	.40 .05
PHONEMIC PROXIMITY			NS	.58 .003	NS	NS	-.62 .001	.45 .03	.55 .005	.52 .009
% CORRECTED				.43 .04	.84 .001	NS	-.43 .03	.74 .001	.45 .027	NS
SEMANTIC ACCEPTABILITY					NS	NS	-.79 .001	.89 .001	.81 .001	.50 .01
SEMANTICALLY UNACCEPT. BUT CORRECTED						NS	NS	.52 .008	.52 .008	NS
SYNTACTIC PROXIMITY							NS	NS	NS	NS
M.P.H.W.								-.72 .001	-.76 .001	-.60 .002
COMPREHENDING									.72 .001	NS
SYNTACTIC ACCEPTABILITY										.41 .05

Percent of correction shows additional positive correlations with semantic acceptability (.49) and syntactic acceptability (.40). It correlates negatively with MPHWH (-.45), graphic proximity (-.65) and phonemic proximity (-.60).

Semantic and syntactic acceptability have an  $r$  of .93. Both have an additional positive correlation with semantic proximity (.46, .49). They have negative correlations with MPHWH (-.81, -.87), and syntactic proximity (-.60, -.44). Semantic acceptability has an  $r$  of -.39 with graphic proximity.

Graphic and phonemic proximity show a .96 correlation. Graphic proximity has a .38 correlation with syntactic proximity. Syntactic and semantic proximity have a negative correlation of -.53. The latter also has a negative correlation with MPHWH (-.49).

Patterns here are still broadly in keeping with those made by subjects in higher grades.

Table 3-12 indicates that, as a group, fourth-grade readers show fewer significant correlations than sixth-graders.

Comprehension has no significant correlations. Comprehending shows positive  $r$ 's with semantic acceptability (.89), syntactic acceptability (.72), percent corrected (.74), graphic proximity (.49) and phonemic proximity (.49). These last two reverse the pattern for older readers which tend toward inverse relationships between comprehending and graphic and phonemic proximity. Comprehending shows a negative correlation with MPHWH (-.72).

Percent corrected has added positive correlations with syntactic acceptability (.45) and semantic acceptability (.43). It shows a negative correlation with MPHWH (-.43).

Semantic and syntactic acceptability have the usual high positive correlation (.81). Both show positive correlations with graphic (.49, .45), and phonemic (.58, .55) and semantic (.50, .41) proximity.

Graphic and phonemic proximity show an  $r$  of .87. Both have positive  $r$ 's with semantic proximity (.40, .52). MPHWH show negative correlations with graphic (-.50), phonemic (-.62) and semantic (-.60) proximity.

There seems here to be a fourth-grade switch from the patterns made by higher grade readers. Whereas high graphic and phonemic proximity is the companion of low comprehending and semantic and syntactic acceptability, here it is positively correlated with those variables. Higher quality goes with higher graphic and phonemic proximity in this grade. Conversely, as quantity (MPHWH) increases, graphic and phonemic proximity decreases.

In Table 3-13 all second graders are considered as a group.

Comprehension shows moderate negative correlations with three proximity scores: syntactic (-.45), graphic (-.42), phonemic (-.35).

Comprehending has positive correlations with semantic acceptability (.81), syntactic acceptability (.55), percent corrected (.70) and phonemic proximity (.38). It shows a negative correlation with MPHW (-.41).

Percent corrected shows no other significant correlations except with percent semantically unacceptable but corrected (.90). This correlation reflects a relatively high percent of semantically unacceptable miscues among the low second-grade readers.

Semantic and syntactic acceptability have an  $r$  of .75. Both correlate positively with graphic (.42, .75), phonemic (.47, .74), and semantic (.40, .56) proximity. Both show negative correlations with MPHW (-.64, -.57). Syntactic acceptability correlates with syntactic proximity (.55).

Graphic and phonemic proximity show an  $r$  of .94. They correlate positively with syntactic (.81, .68) and semantic (.63, .55) proximity, and negatively with MPHW (-.57, -.52).

Semantic and syntactic proximity have an  $r$  of .71. They show negative  $r$ 's with MPHW (-.48, -.64).

Here again is the reversed relationship as shown in fourth-grade graphic and phonemic proximity with comprehending, semantic and syntactic acceptability. Again there are positive correlations. And again these proximity scores drop as MPHW increases.

When data for all groups are correlated there is a sufficiently high  $N$  that most correlations become significant (Table 3-14).

Comprehending shows positive correlations with semantic acceptability (.92), syntactic acceptability (.72), percent corrected (.56), comprehension (.38) and semantic proximity (.26). It has negative correlations with MPHW (-.67), syntactic proximity (-.37) and graphic proximity (-.20).

Comprehension has low positive correlations with semantic acceptability (.36), syntactic acceptability (.18) and percent corrected (.22). There are low negative correlations with syntactic (-.35), graphic (-.25) and phonemic (-.24) proximity.

Percent corrected shows an additional low positive correlation with semantic acceptability (.26) and low negative ones with phonemic proximity (-.29), graphic proximity (-.28), syntactic

TABLE 3-13 SIGNIFICANT PEARSON CORRELATIONS FOR  
Second Grade Readers

	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. BUT CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	sig. <sup>H</sup> -.42 .04	-.35 .08	NS	NS	NS	-.45 .02	NS	NS	NS	NS
GRAPHIC PROXIMITY		.94 .001	NS	.42 .04	NS	.81 .001	-.57 .002	NS	.75 .001	.63 .001
PHONEMIC PROXIMITY			NS	.47 .01	NS	.68 .001	-.52 .007	.38 .05	.74 .001	.55 .005
% CORRECTED				NS	.90 .001	NS	NS	.70 .001	NS	NS
SEMANTIC ACCEPTABILITY					NS	NS	-.64 .001	.81 .001	.75 .001	.40 .042
SEMANTICALLY UNACCEPT. BUT CORRECTED						NS	NS	.50 .011	NS	NS
SYNTACTIC PROXIMITY							-.48 .02	NS	.58 .002	.71 .001
M.P.H.W.								-.41 .04	-.57 .003	-.64 .001
COMPREHENDING									.55 .004	NS
SYNTACTIC ACCEPTABILITY										.56 .004

TABLE 3-14 SIGNIFICANT PEARSON CORRELATIONS FOR  
All Readers

	sig. <sup>1</sup>	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	-.25 .002	-.24 .006	.22 .008	.36 .001	NS	-.35 .001	NS	.38 .001	.18 .04	NS	
GRAPHIC PROXIMITY		.91 .001	-.28 .001	NS	-.22 .01	.60 .001	NS	-.20 .02	NS	.27 .002	
PHONEMIC PROXIMITY			-.29 .001	NS	-.27 .001	.55 .001	-.21 .01	NS	.27 .002	.30 .001	
% CORRECTED				.26 .002	.82 .001	-.26 .003	-.23 .006	.56 .001	NS	-.17 .04	
SEMANTIC ACCEPTABILITY					NS	-.27 .001	-.71 .001	.92 .001	.82 .001	.39 .001	
SEMANTICALLY UNACCEPT. BUT CORRECTED						-.29 .001	NS	.33 .001	-.17 .05	-.29 .001	
SYNTACTIC PROXIMITY							NS	-.37 .001	NS	.31 .001	
M.P.H.W.								-.67 .001	-.75 .001	-.41 .001	
COMPREHENDING									.72 .001	.26 .003	
SYNTACTIC ACCEPTABILITY											.43 .001

proximity (-.26), MPHW (-.23), and semantic proximity (-.17).

Semantic and syntactic acceptability have an  $r$  of .82. Both show positive correlations with semantic proximity (.38, .43) in addition to those shown above and negative correlations with MPHW (-.71, -.75). Semantic acceptability shows a negative correlation with syntactic proximity (-.27). Syntactic acceptability has a positive correlation with phonemic proximity (.27).

Graphic and phonemic proximity have a .91 correlation. Both correlate with syntactic proximity (.60, .55) and with semantic proximity (.27, .30). Syntactic and semantic proximity have an  $r$  of .31. MPHW shows small negative correlations with phonemic (-.21) and semantic (-.41) proximity.

These overall correlations, considered in the perspective of those for grade levels, establish interesting patterns.

Comprehending shows strong positive relationships with semantic and syntactic acceptability, moderate ones with percent of correction and comprehension. It shows a consistent relatively strong negative relationship with MPHW. The weak negative ones with graphic, phonemic, and syntactic proximity reverse and become positive in grades two and four.

Comprehension has similar but much more moderate relationships with the same variables.

MPHW on an overall basis shows only negative significant correlations. These are strong with comprehending, semantic and syntactic acceptability, weaker with percent corrected and vanishing with proximity values as a result of the reversal that takes place in second and fourth grades.

Some variables appear to reverse relationships from grade to grade while others maintain relatively constant relationships.

Table 3-17 and 3-18 show correlations for comprehending and MPHW with other variables for each grade. In some cases, non-significant correlations over .25 are shown because they complete patterns.

Comprehending has consistently high correlation with semantic acceptability (one of its components), but this is .96 to .98 for grades six, eight and ten but .89 for fourth and .81 for second grades. Correlations for comprehending and syntactic acceptability are even farther apart: in second grade readers it drops to .55.

Correlations between comprehending and percent corrected are all positive but higher in second and fourth grades, lowest in sixth (.56) and up in tenth (.67), nearly approximating the



TABLE 3-15 SIGNIFICANT PEARSON CORRELATIONS FOR

Story 59

	sig. <sup>1</sup> GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	NS	.55 .02	NS	NS	NS	.49 .05	.65 .004	NS
GRAPHIC PROXIMITY		.84 .001	-.48 .05	NS	-.49 .05	.60 .01	NS	NS	NS	NS
PHONEMIC PROXIMITY			NS	NS	-.41 .10	.64 .006	NS	NS	NS	NS
% CORRECTED				NS	.91 .001	NS	NS	.54 .83	NS	NS
SEMANTIC ACCEPTABILITY					NS	NS	NS	.93 .001	.92 .001	NS
SEMANTICALLY UNACCEPT. BUT CORRECTED						NS	NS	NS	NS	NS
SYNTACTIC PROXIMITY							.64 .06	NS	NS	NS
M.P.H.W.								-.41 .10	NS	NS
COMPREHENDING									.86 .001	NS
SYNTACTIC ACCEPTABILITY										NS

TABLE 3-16 SIGNIFICANT PEARSON CORRELATIONS FOR  
Story 53

	sig. <sup>n</sup>	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	.55 .016	.70 .001	NS	NS	NS	-.70 .001	.71 .001	.55 .02	NS
GRAPHIC PROXIMITY			.97 .001	NS	NS	NS	NS	NS	NS	NS	NS
PHONEMIC PROXIMITY				NS	NS	NS	NS	NS	NS	NS	NS
% CORRECTED					.49 .04	.78 .001	-.63 .004	-.80 .001	.74 .001	NS	NS
SEMANTIC ACCEPTABILITY						NS	NS	-.83 .001	.92 .001	.83 .001	NS
SEMANTICALLY UNACCEPT. BUT CORRECTED							-.77 .001	-.52 .03	.47 .05	NS	.42 .08
SYNTACTIC PROXIMITY								.46 .05	-.41 .09	NS	.42 .08
M.P.H.W.									-.94 .001	-.72 .001	NS
COMPREHENDING										.70 .001	NS
SYNTACTIC ACCEPTABILITY											NS

TABLE 3-17  
MPHW Correlations

	COMPREHENSION	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECT	SEMANTIC ACCEPT.	UNACCEPTABLE & CORRECTED	SYNTACTIC PROXIMITY	COMPREHENDING	SYNTACTIC ACCEPT.	SEMANTIC PROXIMITY
TENTH	-.37	.30	NS	-.59	-.81	-.41	.59	-.86	-.80	NS
EIGHTH	-.29 NS	NS	NS	-.37 NS	-.35 NS	NS	.37 NS	-.38 NS	-.48	NS
SIXTH	-.38	.31 NS	.26 NS	-.45	-.81	NS	.52	-.84	.87	-.49
FOURTH	NS	-.50	-.62	-.43	-.79	NS	NS	-.72	-.76	-.60
SECOND	NS	-.57	-.52	NS	-.64	NS	-.48	-.41	-.57	-.6+

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Table 3-18

## Comprehending Correlations

	COMPREHENSION	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECT	SEMANTIC ACCEPT.	UNACCEPTABLE & CORRECTED	SYNTACTIC PROXIMITY	MPHW	SYNTACTIC PROXIMITY	SEMANTIC PROXIMITY
TENTH	.50	-.57	-.48	.67	.96	.46	-.76	-.86	.81	NS
EIGHTH	.41 NS	-.42 NS	-.44 NS	.65	.96	.32 NS	NS	-.38 NS	.78	.41 NS
SIXTH	.60	-.46	-.37 NS	.56	.98	NS	-.67	-.84	.89	.49
FOURTH	NS	.42	.45	.74	.89	.52	NS	-.72	.72	NS
SECOND	NS	.25 NS	.38	.70	.81	.50	NS	-.41	.55	NS

second grade (.70).

The relationships between comprehending and graphic and phonemic proximity actually reverse themselves, as they are negative in grades six, eight and ten and positive in grades two and four. Fourth grade shows higher positive correlations. Tenth grade shows the highest negative correlations. This would mean that in the lowest two grades in our study OR's are closer to ER's as comprehending goes up; accuracy and meaning go together. In the three highest grades, concern for accuracy is either at the expense of meaning or an alternative the reader chooses when he loses meaning.

Moderate positive correlations between comprehending and comprehension exist in grades six, eight and ten. There are no correlations in second and fourth grades.

In all grades there is relatively high negative correlation between MPH<sub>W</sub> and semantic acceptability. Eighth grade shows relatively lower correlations between MPH<sub>W</sub> and all other variables. Moderate negative r's exist between MPH<sub>W</sub> and correction for all grades but second. More varied moderate to high negative correlations show between MPH<sub>W</sub> and comprehending and between MPH<sub>W</sub> and syntactic acceptability.

MPH<sub>W</sub> shows weak positive correlations with graphic proximity in grades six, eight and ten and moderate negative ones for graphic and phonemic proximity in grades two and four.

There are negative correlations between semantic proximity and MPH<sub>W</sub> in grades two, four and six.

## Chapter 4

### RESULTS: PART 2

#### Aspects of the Reading Process

In this chapter we present a depth consideration of each aspect of the reading process and its relationship to other aspects.

Some aspects have been grouped to facilitate consideration. All data relating to linguistic levels is grouped, for example.

Statistics in this chapter are based upon the first fifty miscues produced by each subject, in contrast to previous statistics which were based on the total miscues produced by each subject.

#### What Gets Corrected

In Chapter 3 some general data is presented on the correction phenomena in our research.

That summary shows correction to be relatively complex. Only four groups correct more than 30% of their miscues. One group (10L) drops below 10% on one story (61). Low groups above fourth grade tend to show less correction than average and high groups, particularly when partials are added to the data. (Partials are corrections that take place before a complete word is uttered. They are not counted as miscues.)

Figure 4-1 shows a composite picture of mean corrected miscues and uncorrected (no attempt made to correct) miscues. The gap between the two lines represents percent unsuccessful corrections and percent of correct responses abandoned in favor of incorrect ones.

This figure shows groups arranged by stories they read. The stories are sequenced from left to right by increasing difficulty. For all groups about 72% of the miscues show no correction attempt.

Abandoning correct responses occurs in most groups but is a rare phenomenon. In only one group, 2HA (1.2%) does the mean exceed 1% of miscues. Four groups: 6L, 8L, 2H, 10H (both stories), show no examples. All other groups have from .3 to .8%.

So the gap between corrected and uncorrected miscues is largely a matter of unsuccessful correction.

Figure 4-1

Mean Percent Corrected and Not Corrected by Groups

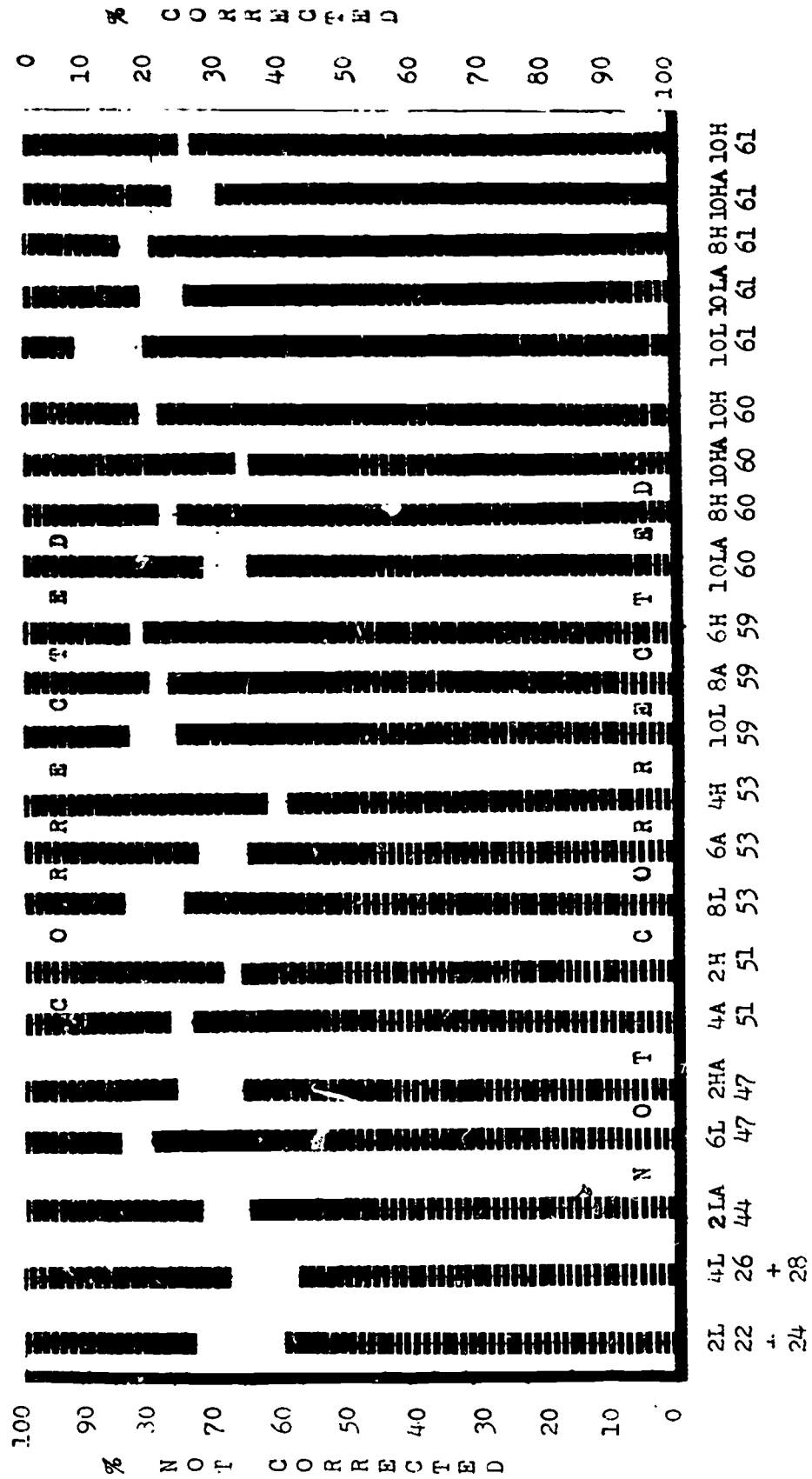


Table 4-1

## Mean Percent of Unsuccessful Correction

Group	Mean Percent	Group	Mean Percent
2L	10.6	8L	8.0
2LA	7.3	8A	1.0
2HA	10.1	8H60	1.3
2H	2.5	8H61	4.7
4L	11.9	10L59	4.4
4A	2.3	10LA60	3.6
4H	2.1	10HA60	2.8
		10H60	.4
6L	6.7	10L61	10.4
6A	4.0	10LA61	5.9
6H	2.0	10HA61	8.1
		10H61	1.5

For all high groups unsuccessful correction is 2.5% or lower except 8H on the more difficult story 61 (4.7%). Average readers above second-grade are 4% or under except 10LA and 10HA on story 61. Among low groups there is decline from about 11% for 2L and 4L to 4.4% for 10L on story 59. This last group, however, hits 10.4% on story 61.

The same group (10L) is also the only group whose unsuccessful attempts approached or exceeded successful attempts (10.4% unsuccessfully corrected, 7.6% corrected). The 8L group comes closest (8% unsuccessfully corrected, 14.3% corrected). These high figures are largely due to a tendency to persevere, but unsuccessfully, in dealing with unknown words.

Unsuccessful corrections, then, are of little importance except among low groups. They are likely to increase to notable proportions when readers encounter a more difficult story. This was true for all groups who read story 61 except the 10H group who increased, but only to 1.5%.

There is a more marked tendency for percent of uncorrected miscues to increase as we examine successively more difficult stories than for successful corrections to decrease. All groups reading both 60 and 61 correct more in 60 than in 61 except the 10H group which corrects more in the harder story (61).

In Chapter 3 we report that percent corrected shows significant negative correlations with MPHWS for all grades except second: fourth, -.43; sixth, -.45; eighth, -.37; tenth, -.59. Comprehending correlates positively with correction at all grades: second, .70; fourth, .74; sixth, .56; eighth, .65; tenth, .67.



For all subjects, percent corrected correlates positively with comprehension (.22), percent semantically acceptable (.26), percent unacceptable semantically but corrected (.82), and comprehending (.56). It correlates negatively with graphic proximity (-.28), phonemic proximity (-.29), syntactic proximity (-.26), MFM (-.23), and semantic proximity (-.17).

These correlations suggest some factors which contribute to correction, but depth comparison is needed to get at which miscues are likely to be corrected and which ones are not.

Data reported in Chapter 3 combines percent of semantically acceptable miscues with percent unacceptable but corrected to produce a comprehending score: the percent originally acceptable semantically or subsequently corrected. This appears to be a measure of the reader's on-going concern for meaning.

Theoretically, the reader should correct semantically and/or syntactically unacceptable miscues and not be unduly concerned with correcting those which are acceptable.

Our data indicates that the average of the group means for successful correction is 22%. Our concern is whether readers correct miscues more often when they need correction than when they don't.

Table 4-2 shows some over-all figures relating correction to syntactic acceptability.

Table 4-2

Syntactic Acceptability and Mean Percent of Miscues Corrected

Grade	% of all miscues corrected	Unacceptable	Only prior	Only after	Fully acceptable
2	28.0	40.4	35.2	33.5	19.5
4	29.5	38.5	48.7	35.0	20.7
6	18.0	31.8	33.8	17.1	11.7
8	18.2	31.4	34.6	18.8	13.0
10	20.9	32.8	42.0	23.8	16.6
All readers	21.8	34.6	39.2	23.5	16.4

At all grade levels readers correct syntactically unacceptable miscues at a much greater rate than fully acceptable miscues. For all readers in this research the mean percent of correction for partially syntactically acceptable is double the rate for fully acceptable miscues. Only fourth-grade readers show a ratio of less than 2 to 1.

But the highest rate of correction is shown for miscues which are acceptable only with prior syntax. This is a 39.2% mean for all readers. Only among second graders is this correction figure lower than for syntactically unacceptable miscues.

Since only a few miscues were syntactically acceptable in the sentence but not the passage (largely pronoun-noun and noun-verb agreement cases) the figures for correction of those miscues are not statistically valid.

Table 4-3

Correction and Syntactic Acceptability

By Group and Level

	% of all Miscues Corrected	Not Acceptable	Prior	After	Full
Low					
2L	27.2	29.3	37.0	36.8	18.9
4L	31.4	48.5	44.7	20.0	20.0
6L	12.1	18.3	17.6	8.3	6.6
8L	14.3	20.3	28.8	6.9	8.2
10L59	14.8	3.6	22.0	10.5	14.6
10L61	7.6	7.8	12.7	2.7	6.6
Mean	17.9	21.3	27.1	14.2	12.5
Average					
2IA	26.7	39.4	27.2	57.1	18.3
2HA	22.7	36.7	26.5	26.9	17.3
4A	19.3	18.9	34.7	0.0	15.2
6A	25.1	33.3	51.2	22.2	18.9
8A	21.1	47.7	32.0	21.4	15.3
10IA60	29.0	60.0	67.4	22.2	18.1
10HA60	32.0	35.3	57.9	44.4	26.3
10IA61	18.3	6.1	21.9	6.2	17.7
10HA61	22.0	30.0	34.1	14.3	18.8
Mean	24.0	35.2	41.4	23.9	18.4
High					
2H	30.2	56.1	30.0	13.3	23.4
4H	37.9	48.1	66.7	50.0	27.0
6H	16.8	43.8	32.8	20.8	9.5
8H60	20.7	36.4	44.4	27.3	15.9
8H61	16.9	21.4	33.3	15.8	12.7
10H60	19.8	60.0	63.2	50.0	14.7
10H61	23.7	50.0	57.1	40.0	16.0
Mean	23.7	45.1	46.8	31.0	17.2

The pattern of influence of syntactic acceptability on correction (Table 4-3) becomes clearer when groups are examined by level of proficiency. The low groups show a combined tendency toward flatter patterns of correction. They are generally more likely to correct miscues acceptable only with prior than any other category. For all groups but 10L (both tasks) correction of syntactically unacceptable miscues considerably exceeds correction of fully acceptable miscues. The 2L and 4L groups not only show the highest correction rates among low groups but also correct the highest percents of unacceptable miscues, considerably more than the percent of fully acceptable miscues. The 10L group has its best success in correcting miscues acceptable only with prior, though that success is quite moderate. This group, particularly on story 61, is unlikely to correct at all and is inefficient in correcting miscues that need correction most.

The tendency for all groups is to correct between 15% - 20% of miscues which are fully acceptable syntactically. Exceptionally low percents are for three low groups whose overall correction rate is less than 15% and two high groups with about 17% overall correction. The only groups that exceed 20% are 10HA on story 60 (26.3%) and 2H (23.4%) and 4H (27%). These three groups all have overall correction over 30%.

Average groups show a combined tendency to correct almost twice as high a percent of syntactically unacceptable miscues as fully acceptable. For high groups this ratio rises to  $2\frac{1}{2}$  to 1. Exceptions are the 4A group and 10LA group on story 61. The latter is remarkable in that the rate of correction of syntactically unacceptable miscues for 10LA readers drops from 60% on story 60 to 16% on story 61. Correction of miscues acceptable with prior drops from 67% to 22% but correction of syntactically acceptable miscues stays at a constant 18%.

Other groups reading both 60 and 61 show similar but more moderate tendencies; 8H slips from 36% to 21% correction of syntactically unacceptable miscues and from 44% to 33% on those acceptable only with prior; 10HA drops from 58% to 34% on the latter.

Both average and high readers tend to correct a higher percentage of miscues syntactically acceptable only with prior than totally unacceptable miscues. But this gap is greater and most consistent for average readers. High readers except the 8H group correct over 40% of unacceptable miscues. Average readers except 8A and 10LA on story 60 correct under 40% of those miscues.

Some conclusions are warranted about the relationships of syntactic acceptability to correction:

1. Correction of fully syntactically acceptable miscues seems unrelated to syntactic cues. This is relatively constant for

all groups except where percent of overall correction is unusually high or low. Such corrections appear in fact to be one factor in variation of overall correction percentages; high and low overall figures partly reflect the readers' tendency to correct syntactically acceptable miscues.

2. All groups in all grades and levels of proficiency show relatively strong tendencies to be cued to correct by unacceptable syntax. They tend to be more consistently successful in correcting miscues which are at least acceptable with prior, but high readers at almost all grade levels are also quite likely to correct miscues totally unacceptable syntactically, as are some average groups.
3. Low groups above fourth-grade correct less than average and high groups who tend to correct something less than 25% of all miscues. But the mean for high readers on unacceptable miscues is about 45% and for average readers it is about 40% compared to under 25% for low readers.
4. Even high readers leave a considerable number of unacceptable miscues uncorrected. This effect is somewhat attenuated by the practice in our research of counting nothing acceptable if other uncorrected miscues have rendered the sentence unacceptable. Still, no group corrected more than 2/3 of the miscues syntactically unacceptable or acceptable only with prior or after.

Table 4-4

Semantic Acceptability and Correction  
By Grades

Grade	% of all Miscues Corrected	Not Acceptable	Semantic Acceptability			Fully Acceptable
			Prior	After	Sentence	
2	28.0	31.6	35.6	33.7	23.8	18.1
4	29.5	28.2	46.0	19.0	27.0	20.6
6	18.0	17.6	34.5	14.3	18.9	9.7
8	18.2	18.1	33.0	15.5	24.6	13.1
10	20.9	18.2	41.3	23.8	26.9	16.0
All readers	21.8	21.9	38.5	22.6	24.8	15.6

Readers at all grades correct more semantically unacceptable miscues than fully acceptable ones (Table 4-4). But the contrast is not nearly as notable as it is for syntactic acceptability. For all grades, correction of miscues which were semantically acceptable with what preceded them is highest of all categories and at least double the rate of fully acceptable miscues corrected.

A larger number of miscues are acceptable semantically than syntactically in the sentence but not in the passage. With the exception of sixth-grade, all groups corrected about 25% of these. Rate of correction of miscues acceptable only with what follows was more varied. In all but fourth-grade it exceeded correction rate for fully acceptable miscues.

Table 4-5

Correction and Semantic Acceptability by Group and Level

Group	% of all Miscues Corrected	Not Acceptable	Prior	After	Sentence	Full
<b>Low</b>						
2L	27.2	25.9	40.0	31.6	17.9	20.8
4L	31.4	40.9	39.3	10.0	28.6	18.5
6L	12.1	13.4	19.5	4.5	0.0	7.8
8L	14.1	13.8	24.2	6.7	6.7	11.7
10L59	14.8	7.3	24.4	9.5	26.7	20.0
10L61	7.6	5.3	18.8	0.0	9.1	16.7
Mean	17.9	17.8	27.7	10.4	14.8	15.9
<b>Average</b>						
2IA	26.7	23.9	40.4	55.6	33.3	17.5
2HA	22.7	20.3	29.7	26.7	14.3	19.1
4A	19.3	12.8	34.9	0.0	16.0	16.0
6A	25.1	16.7	52.9	20.0	42.1	15.2
8A	21.1	25.0	32.1	19.0	42.9	11.4
10LA60	29.0	25.0	64.4	28.6	15.0	16.0
10HA60	32.0	30.9	57.4	41.7	52.2	18.8
10LA61	18.3	16.0	22.4	10.5	32.0	15.3
10HA61	22.0	18.1	31.1	21.1	31.8	15.3
Mean	24.0	21.0	40.6	24.8	31.1	16.1
<b>High</b>						
2H	30.2	56.3	32.2	21.1	29.7	15.2
4H	37.9	30.9	63.9	47.1	36.4	27.4
6H	16.8	22.6	31.1	18.5	14.7	6.1
8H60	20.7	25.6	43.2	12.5	28.0	14.6
8H61	16.9	8.1	32.5	23.8	20.8	14.7
10H60	19.8	31.6	60.9	33.3	20.0	13.0
10H61	23.7	11.6	51.4	55.6	28.6	13.3
Mean	23.7	26.7	45.0	30.2	25.5	14.9

Table 4-5 examines the influence of semantic acceptability on correction by groups and levels. There is, as indicated earlier, at all levels considerably less correction of miscues fully semantically unacceptable than fully syntactically unacceptable.

High groups correct a higher percent of semantically unacceptable miscues than average groups whose rate of correction exceeds that of low groups.

The contrast between groups reading story 60 and 61 is worth isolating for comparison on correction of semantically unacceptable miscues (see Table 4-6).

Table 4-6

Semantic Unacceptability and Partial Acceptability  
on Stories 60 and 61

Stor.	8H		10LA		10HA		10H	
	Not Accept.	With Prior	Not Accept.	With Prior	Not Accept.	With Prior	Not Accept.	With Prior
60	25.6	43.2	25.0	64.0	30.9	57.4	31.6	60.9
61	8.1	32.5	16.0	22.4	18.1	31.1	11.6	51.4

The sharp drop shown here on the more difficult task demonstrates the problem of correcting miscues once meaning is lost completely. Rate of correction of miscues acceptable with prior is higher for all groups for both stories but also drops on the harder story. Still, it stays appreciably higher than correction of fully unacceptable miscues. The 10H group drops only a small amount but the 10LA group falls off from 64% to 22% on correction of miscues acceptable with prior.

Table 4-5 shows less variation in correction of fully acceptable miscues, with group means at all grades clustering around 15% except those with unusually high or low general correction rates.

In examining the relationship of syntactic and semantic acceptability to correction, one must keep in mind certain factors.

- 1) To be semantically acceptable a miscue must also be syntactically acceptable. Furthermore if a miscue is syntactically only acceptable with prior or after portions of the sentence, it can not be semantically acceptable in the sentence or passage.
- 2) More miscues are fully semantically unacceptable than are fully syntactically unacceptable.
- 3) Non-word substitutions are frequently coded syntactically acceptable if they retain expected intonation and inflectional suffixes but they are not coded semantically acceptable.

Table 4-7

Correction of Non-Word Substitutions

Grade & Level	% of all Miscues that are non-words	% Corrected	% Unsuccessful Correction
<b>Low</b>			
2L	3.0	0.0	0.0
4L	4.9	0.0	26.7
6L	9.9	4.3	13.0
8L	11.0	4.0	28.0
10L59	22.5	12.5	6.2
10L61	38.5	2.8	20.8
<b>Average</b>			
2LA	10.6	9.5	4.8
2HA	12.4	7.7	30.8
4A	19.6	2.1	2.1
6A	7.5	0.0	17.6
8A	12.2	10.3	0.0
10LA60	6.1	0.0	27.3
10LA61	30.6	25.4	15.3
10HA60	5.4	18.2	18.2
10HA61	23.4	15.9	20.5
<b>High</b>			
2H	6.2	27.3	18.2
4H	13.5	7.1	7.1
6H	13.1	16.7	10.0
8H60	7.1	16.7	5.6
8H61	24.9	5.8	9.6
10H60	3.4	14.3	0.0
10H61	24.0	12.5	7.5



If a reader produces a fair number of non-word substitutions which he does not correct, that could help to explain why his rate of correction of syntactically unacceptable miscues is higher than his rate of correction of semantically unacceptable ones. Since all syntactically unacceptable miscues are also semantically unacceptable miscues, corrections of the former are included among corrections of the latter. This means that a very large proportion of miscues syntactically acceptable but not semantically acceptable are not corrected.

Table 4-7 shows the percent of non-words each group produced and the percent of those which were corrected. There is a tendency for lower grade low proficiency groups to omit rather than produce a non-word, so those groups have low percents of non-words. Among low groups each grade has a successively higher rate of non-words. Among average readers, this increase occurs through 4A, but then it is countered above that as readers encounter fewer words which are unfamiliar or unpronounceable. High readers tend to have low levels of non-word substitutions. The exception again is for all groups reading story 61 where percent of non-words shoots up even for 10H to 24%.

Few non-word substitutions are successfully corrected. There is, particularly among a number of low and average groups, an unusually high rate of unsuccessful correction. One can see how this would be so, as readers make more than one attempt at unfamiliar words.

Perseverance at unfamiliar words is particularly noticeable among low average and high average readers on story 61. The 10LA group attempts to correct 40% of its non-word substitutions and is successful on 25%. The 10HA readers try to correct 36.4% and succeed on 15.9%. The 10L group, with a high 38.5% non-word substitution, attempts to correct 23.6% of them but succeeds with only 2.8%.

This data on correction of non-words does appear to account partly for the difference between correction of syntactically and semantically unacceptable miscues. It should be added that it is indeed possible that the reader may have a strong idea of the meaning of words he never successfully produces. He obtains this from the semantic and syntactic context. We have confirmed this by asking readers subsequent to reading to define frequently missed words like ewe and typical. Virtually all readers have appropriate definitions. Since we cannot know this from their oral reading we treat all such non-words as consistently unacceptable semantically.

The data we have thus far presented on which miscues get corrected has suggested that about 15% of all syntactically and semantically acceptable miscues are corrected by all groups. This seems to suggest that factors other than syntactic and semantic ones are at work in cueing correction.



Table 4-8

## Correction and Graphic Proximity

		No	Low	Medium	High
2L	C	33.3	27.0	31.3	8.3
	NC	16.2	20.4	48.7	14.9
4L	C	11.5	14.3	34.6	34.7
	NC	5.6	13.7	46.0	34.4
6L	C	7.4	18.5	44.4	29.6
	NC	3.2	3.8	40.2	52.8
8L	C	14.8	11.1	22.2	50.8
	NC	6.9	7.0	35.4	51.8
10L59	C	14.3	9.6	28.5	47.7
	NC	7.4	6.7	45.9	40.0
10L61	C	7.7	7.7	38.5	46.2
	NC	4.6	2.3	46.6	46.6
<b>Average</b>					
2LA	C	13.0	10.8	39.1	37.0
	NC	8.4	10.2	36.4	44.8
2HA	C	6.5	11.7	52.1	26.1
	NC	8.6	6.1	36.2	49.1
4A	C	17.1	20.0	31.4	31.5
	NC	3.5	7.1	55.3	34.0
6A	C	17.1	17.2	22.8	42.8
	NC	7.7	6.0	34.2	52.8
8A	C	10.8	16.2	37.8	35.1
	NC	14.0	12.5	30.2	43.5
10LA60	C	7.9	23.7	42.2	26.3
	NC	7.5	21.2	42.5	28.1
10LA61	C	3.0	6.0	42.4	48.5
	NC	11.0	5.6	38.6	45.0
10HA60	C	16.1	17.8	39.2	26.8
	NC	11.0	15.9	31.7	41.5
10HA61	C	24.2	6.1	33.3	36.3
	NC	11.3	8.3	31.9	48.4
<b>High</b>					
2H	C	15.4	23.1	30.8	30.8
	NC	18.3	12.6	38.1	31.0
4H	C	5.8	26.9	32.7	34.5
	NC	7.5	5.0	28.7	58.7
6H	C	16.1	12.9	32.3	38.8
	NC	13.2	6.6	23.5	56.6
8H60	C	18.8	28.0	37.6	15.6
	NC	17.8	18.9	31.7	31.7
8H61	C	18.2	27.3	22.7	31.8
	NC	6.4	9.0	45.4	39.1
10H60	C	9.1	31.8	31.8	27.2
	NC	11.6	20.9	30.2	37.3
10H61	C	19.2	11.5	42.3	26.9
	NC	2.4	3.6	38.6	55.4

Table 4-9

## Correction and Phonemic Proximity

		No	Low	Medium	High
2L	C	54.2	8.4	29.2	8.3
	NC	31.1	17.6	29.8	21.6
4L	C	30.8	6.5	37.2	25.7
	NC	16.7	15.1	34.2	34.1
6L	C	11.1	18.5	48.1	22.2
	NC	6.4	5.6	39.5	48.4
8L	C	22.2	14.8	22.2	40.7
	NC	13.1	5.3	30.7	50.8
10L59	C	19.0	9.5	38.1	33.7
	NC	8.1	6.7	45.1	40.0
10L61	C	7.7	7.7	53.9	30.8
	NC	6.2	3.1	47.1	43.1

Average					
2LA	C	26.1	6.5	41.3	26.1
	NC	15.0	11.2	29.9	44.0
2HA	C	17.4	12.8	49.9	19.6
	NC	10.3	8.7	38.0	43.1
4A	C	20.0	22.9	28.6	28.6
	NC	8.2	8.3	52.3	31.2
6A	C	22.9	17.2	20.0	40.0
	NC	18.1	3.4	26.7	51.7
8A	C	21.6	10.8	29.7	32.4
	NC	15.6	10.2	27.3	46.9
10LA60	C	28.9	15.8	42.2	13.2
	NC	23.8	9.9	38.7	27.4
10LA61	C	6.1	12.1	36.4	45.4
	NC	11.9	6.4	37.7	44.0
10HA60	C	28.6	12.5	41.1	17.9
	NC	20.7	3.6	37.8	37.8
10HA61	C	24.2	9.1	30.4	36.4
	NC	17.5	4.1	32.9	45.3

High					
2H	C	33.3	7.7	30.8	28.2
	NC	18.3	11.3	38.0	32.4
4H	C	26.9	9.5	32.6	30.8
	NC	11.2	1.2	33.7	53.8
6H	C	29.0	6.4	42.0	22.6
	NC	13.2	8.9	31.7	46.3
8H60	C	27.3	24.2	36.4	12.1
	NC	26.7	11.0	25.8	36.7
8H61	C	36.4	13.6	22.7	27.3
	NC	7.3	6.3	47.3	39.1
10H60	C	13.6	18.2	31.8	36.4
	NC	18.4	12.5	33.3	35.6
10H61	C	19.2	7.6	38.5	34.6
	NC	4.8	2.4	37.3	55.4

One possibility is that readers correct for graphic and/or phonemic accuracy.

Table 4-8 shows the graphic proximity of corrected and uncorrected miscues.

If graphic accuracy is a factor in correction one would expect that miscues with no or low proximity between ER and OR would be more likely to be corrected while high proximity miscues would be less likely to be.

Among all low groups there is a higher percent of no and low proximity miscues among corrected than uncorrected miscues. However the percent of uncorrected miscues with high proximity is higher than that of corrected miscues in only 2L and 6L groups. A higher percentage of medium graphic proximity miscues are found among uncorrected miscues than corrected in all groups but 6L.

Among average groups a pattern is harder to see. A higher percentage of high proximity miscues exists among those which are uncorrected in all groups but 10LA61. In some cases the difference is a small one however. Six groups show higher percents of medium proximity miscues among those corrected. Two groups, 4A and 6A show the opposite, while the 10LA60 group shows equal percents.

Six average groups show more low proximity miscues among corrected miscues than uncorrected. Two groups have virtually equal percents (2LA and 10LA61) and one group (10HA61) shows a higher percent among uncorrected miscues.

For miscues with no graphic similarity the pattern among average groups is more mixed. Five groups have higher percents of such miscues among corrected miscues. Three groups (2HA, 8A, 10LA61) have higher percents among uncorrected miscues. The 10LA60 group has virtually equal percents.

Every high group except 2H shows higher percents of high proximity in uncorrected miscues. The 2H group shows equal percents. For medium proximity miscues, four high groups (4H, 6H, 8H60, 10H61) show higher percents among corrected miscues, two (2H, 8H61) show a higher rate among uncorrected, while 10H60 shows little difference.

All high groups show higher percents of low proximity miscues among corrected than uncorrected miscues. Only two high groups (both 8H and 10H on story 61) show any pronounced tendency for corrected miscues to have no similarity. For all other groups percents for such miscues are similar for both corrected and uncorrected miscues.

The relationship between correction and graphic proximity can be summarized as follows:

1. Higher percents of miscues with no or low proximity show up more among corrected miscues than uncorrected ones in low groups in all grades. Medium proximity miscues form a higher proportion of uncorrected miscues among these low readers.
2. Almost all high and average groups show more high proximity miscues among those uncorrected.
3. High groups consistently show higher percents of low graphic proximity miscues among corrected ones. Most average groups show a similar pattern.
4. Average and high readers show mixed patterns for miscues with no similarity.

In general, then, there is some tendency not to correct high graphic proximity miscues particularly among more proficient readers and some tendency to correct low proximity miscues at all levels.

Because of the close relationship between phonemic and graphic proximity, one would expect correction to relate to both in similar fashion.

All groups but two show higher percent of high phonemic proximity miscues among uncorrected miscues than corrected. The exceptions, 10H60 and 10LA61, have roughly equal percents for both.

All groups but three show more miscues with no phonemic similarity among corrected miscues. The exceptions include the same two groups as above which show higher percents among uncorrected miscues. Percents for 8H60 are about equal. This is a more consistent pattern than is shown for miscues with no graphic proximity.

Though most groups have higher percents of low proximity miscues among corrected miscues there are a number of exceptions. Groups with higher percents among uncorrected miscues are 2L, 4L, 2LA, 2H, and 6H. The 8A group has roughly equal percents.

The pattern of relationship between medium phonemic proximity and correction is very mixed. No grade or level shows any consistent pattern.

If we compare the data for graphic and phonemic proximity relationships to correction we can observe some similarities and some shifts.

High graphic and high phonemic proximity miscues are more likely among uncorrected miscues for average and high groups. But low groups show more consistently higher percent of high

phonemic proximity miscues among their uncorrected miscues while no such pattern shows for high graphic proximity.

While only low groups show consistently higher percent of no graphic similarity miscues among corrected miscues, all levels tend to have higher percents of no phonemic similarity miscues among corrected ones. On the other hand low phonemic proximity miscues are more consistently higher among corrected miscues than are those with low graphic proximity. This seems to represent a shift with low graphic proximity more likely to be corrected and no phonemic similarity more likely.

#### Summary: What Cues Correction?

While no group corrects more than 38% of its miscues we have shown that some miscues are more likely to be corrected than others.

The search for deep grammatical structure is demonstrated by a strong tendency to correct miscues which result in unacceptable or partially acceptable syntactic structures. Several groups correct better than half of these. There is a strong tendency not to correct those in which structure is acceptable.

Semantically unacceptable miscues are also more likely to be corrected, though there is much greater correction of those acceptable semantically with prior. Non-words, mostly considered semantically unacceptable\*, are seldom successfully corrected. They generate a rather high rate of unsuccessful attempts at correction, however. Semantically acceptable miscues are seldom corrected.

The influence of grammar and meaning on readers' correction strategies is unmistakable in this data. Of the two, syntactic anomaly seems to trigger correction more consistently. If meaning is lost completely it is apparently hard to recover, even for proficient readers.

All groups correct about 15 - 20% of syntactically unacceptable miscues and about 1% of semantically acceptable ones. These may result from graphic or phonemic cues.

Our data provides some evidence of greater than average correction of miscues with low or no graphic and/or phonemic proximity and less than average correction of those with high proximity. These tendencies are more consistent across groups for phonemic proximity, though graphic proximity is generally higher for readers at all levels.

\*exceptions are for certain proper names

Since non-word substitutions tend to have high or moderate proximity, and successful correction of such miscues is relatively low even among persevering readers, it is unlikely that "Phonics" is a very important aspect of successful correction. Rather it appears that gross graphic or phonemic mismatches between the OR and the graphic display catch the reader's attention and trigger corrections. It is also possible that this takes place most often when unacceptable grammar or meaning have already made the reader aware of his miscue. That could explain the tendency of high and average readers not to correct miscues with no graphic similarity. Such miscues are generated after the reader has the meaning and produces a new representation of it.

The miscues which ought to be easiest to correct, those with moderate or high graphic and phonemic proximity, are not likely to be corrected unless the reader's attention is drawn to the miscue by grammar or meaning.

#### Dialect: How Does it Affect Reading?

Dialect involved miscues represent a shift on the part of the reader to a surface representation which fits his own dialect rather than the writer's. The difference may be one of phonology only: dis for this. It may be a shift involving a different rule for generating the surface structure from the deep structure, for example, the deletion of an -ed past tense morpheme because the reader's dialect doesn't require one. Or it may involve a dialect shift in choice of vocabulary as when the reader prefers headlights to the writer's headlamps.

The most important thing to understand about dialect is that these miscues do not interfere with the reading process or the construction of meaning, since they move to the reader's own language.

A miscue is an observed response which differs from the expected response. The expected response, however, is not a single precise pronunciation of any particular word or phrase. Rather it is a range that includes what is likely to be produced by the population the study covers. Any deviation which is simply phonological is therefore not counted as a miscue if it falls within some recognizable dialect form. Variations among speakers in the study in the way they say I /a/, /ay/, this /dis/, /ðis/ etc. would not be included as miscues.

What that means is that only miscues which involve inflection, grammar, or vocabulary will be found in our data.

Dialect variations among the subjects in this study are considerable between and within racial groups. Only a small number of subjects in the study, however, produced any notable percentage of miscues involving dialect. Furthermore, in every grade-proficiency group but four (10LA, 8L, 6L, 4A) there are some subjects with no dialect miscues. Three groups (4H, 8H61, and

10H61) have no subjects that produced dialect miscues. Only two subjects in the 2H group, 10H60 group and 4A group show dialect miscues.

All but one of the subjects with more than 10% dialect are Black. But there are many Black subjects with few dialect miscues and others with none. And there are White subjects with dialect-involved miscues.

Seven subjects among the total of ninety-four in this research showed more than 20% dialect involved miscues. All are Black. These are found in groups as follows:

2HA:	1 - 31%	4A:	1 - 28%	6L:	2 - 30%, 21%
6A:	1 - 23%	8L:	1 - 29%	10L:	1 - 28% on 59A60

These can be seen to be well distributed except that none are in any high groups.

Those subjects with high dialect involvement tend to be more consistent in oral reading in using certain features of a Black English dialect. No subject whose oral speech shows these features is entirely consistent in using them in oral reading but these subjects come closest.

The dialect features which occur most commonly are:

1. Use of null form of past tense morpheme: look/looked, call/called, wreck/wrecked, love/loved, pound/pounded, help/helped, use/used.
2. Use of null form of plural noun morpheme: thing/things, work/works, story/stories, prize/prizes.
3. Use of null for third person singular verbs: look/looks, work/works, hide/hides.
4. Use of null form for possessives: Freddie/Freddie's, Mr. Vine/Mr. Vine's, one/one's, it/its.
5. Regular present for past irregular forms: run/ran, have/had, keep/kept.
6. Be form substitution and deletion: was/were, is/are, we/we're, he be talking/ he'd been talking.
7. Some readers tend to over compensate for their tendency to delete ed with a resulting confusion over past tense base forms. This produced: likeded/liked, helpeded/helped, stoppeded/ stopped.

The dialect miscues listed above are much more common than



more complex transformations of grammar or substitutions of preferred terms. In fact, these other kinds of dialect miscues, though they occur, must be considered rare.

Fortuitously, we chose one story for the study written by a British author which created dialect mismatch for all the subjects who read it and shed a light on the phenomenon of dialect shift from a different direction. Poison, a short story by the British author Roald Dahl (our story 60) provided many uncommon uses of language. It was read by 8H, 10LA, 10HA, and 10H groups.

If the author himself had been the researcher listening to the retelling of his own story, he no doubt would have noted many examples to support the fact that the readers were speakers of a dialect other than his own. But Roald Dahl did not listen, American researchers did, and what they heard corresponded to their own system.

1. ER I switched off the headlamps of the car.  
OR headlamps
2. ER Stop. Wait a moment, Timber.  
OR minute
3. ER Look, could you come round at once?  
OR around

These examples were produced not just by one reader, but by many and with dependability. Six of twenty-one readers substituted lights for lamps. Twelve said minute instead of moment. Fifteen preferred to say around instead of round. The phonological systems of the readers and the author, of course, differ far more radically than either their grammatical systems or their choices of lexical items for the same ideas. But an analysis of the phonological system is not part of this study.

The author tended to use certain adverbs without -ly that our American children added to fit the constraints of their dialects. His quick was read as quickly twelve times by our readers. (Do it quick.) Quiet (lying very quiet) was less of a problem but it was changed to quietly twice.

Old "usage" problems pop up in this story including the grammar book lie - lay bugaboo. Five times lying was changed to laying. Laid for lay occurred twice.

British idiom led to some other difficulties:

This sentence, "It looked like a bad go of malaria", produced eight miscues. Only one directly involved go but four readers changed the following word of. It became from, on, and for (twice). Two miscues involved it. One miscued on malaria.



"He rang off," a British alternate for "hung up", produced four miscues. Two moved to ran off.

Clearly, written English is not a single dialect and the possibility of producing dialect involved miscues depends on the writer as well as the reader.

Among the groups who read both 60 and 61 (10LA, 10HA, 8H, 10H) there is a greater tendency to produce dialect miscues on the short story (60) than on the essay (61). This is partly accounted for by the British dialect of the writer. But it is also apparently the result of the more relaxed reading of story 60 which was easier for almost all readers to handle. Four readers increased their dialect miscues 9 - 15% on the easier task (two were 10LA, one was 8H, one 10H). Apparently more careful reading may not be more effective but it is more accurate, producing fewer deviations to the reader's dialect. Readers of story 59 and 61 (10L) produced slightly more dialect miscues in 59, for them an easier task.

An examination of dialect in reading miscues would not be complete without some comparison to the oral language of the readers. To get at this, we listened to the electronically recorded retelling of the story by each reader who produced no dialect involved miscues.

The retellings of those children who made no dialect miscues while reading reveal several facts of great interest. Of the thirty children in this group, twelve used a dialect other than the authors' in recounting their own versions of the stories. These readers include the full range of grade levels and ranks from the 2H reader who described the main character of a story by saying:

"Freddie, he was thinking to be a scientist."

to the 10L reader who explained,

"Then Peggy was hungry because he didn't get no food."

And these readers are not all Black children. A White 4H reader, who read My Brother is a Genius with no dialect miscues, explained to the researcher that the baby brother Andrew was very unusual because:

"He said all them big words."

Unfortunately the baby was not...

"A baby just like ordinaries baby...who cries and says words that doesn't you know, that ain't true. Like da-da."

And discovering this apparent deception,

"Mr. Barnaberry asked him what was the idea."

The numerous occurrences of no dialect involvement in reading, particularly among those children ranked 'high,' does not mean that we have a group of White speakers who use standard English only. Some of the most interesting examples of bidialectalism in retelling came from proficient Black readers who showed no dialect miscues in oral reading. They produced these examples of embedded questions:

1. They asked Harry did he really see it in the first place.
2. He called the doctor a few names and asked him was he calling him a liar.

alternate verbal constructions:

1. If I had wrote it, I'd have done it that way.
2. Andrew had bend over the crib.
3. He say it might be better to forget about birthdays.

and double negatives:

1. He said 'physiological' and no baby never said that before.
2. He didn't do nothing right there.

From average readers come these examples:

1. Peggy was fighting with them and he surprise them and knock the coyote away from Chip and she start fighting with them.
2. So then that boy took out a dictionary and turned to the S's and start reading.

and from readers ranked low we find these:

1. Then one of the men said "Hold it! That wasn't no coyote."
2. He hurt hissself or something.
3. He ain't - he hasn't ever ate a sheep before.

Dialect Conclusions

Shifts from the author's to the reader's dialect in oral reading occur among most of the readers in this study. They are

never entirely consistent; the reader who tends not to produce -ed forms will produce some. Evidence of dialect in oral reading is less likely than in the subject's oral retelling; in fact, some readers with no dialect involved miscues show frequent non-standard instances in retelling.

Less proficient readers show more dialect involvement but we have no clear cause-effect evidence. Our study shows that Black speakers of low status dialects can be proficient readers. It does not show that dialect difference or dialect rejection is not a cause of difficulty in learning to read.

Most frequent shifts are in inflectional suffixes: past, noun plurals, s-forms of verbs, and possessives, in that order. More complex grammar shifts and lexical substitutions occur but are rare.

Readers seem to make fewer dialect shifts when the task is harder and they are less relaxed. Further, the study shows that, given a writer with an unfamiliar dialect, most readers will tend to shift toward their own dialect.

#### Shapes and Sounds in Reading

Only those miscues involving word level substitutions can be considered in the analysis of graphic and phonemic relationships between the OR and ER. Omissions and insertions are excluded because they do not involve both OR and ER, and comparisons are consequently impossible. As mentioned in Chapter 3, the following are excluded in this analysis: phonological dialect miscues, repeated occurrences of the same word substitutions at different locations in the text, (including different non-word substitutions) and second or subsequent attempts at a single text location.

Considering these exclusions we find that 24.7% of the total miscues produced by all readers are not involved in the analysis of graphic and phonemic proximity. Table 4-10 shows that as reading proficiency increases, the rate of involvement in word level substitutions tends to decrease. Low readers in grades two and four, because of relatively high rates of omissions, show higher percents of miscues not involving word substitution. Otherwise, all low groups show 12 to 15% miscues that do not involve substitutions at the word level. Average second and fourth grade readers have relatively low percents of uninvolved miscues. The 4A group has 92% of its miscues, the highest percentage of any group, involved with word level substitution. Average groups above fourth-grade have approximately 25 to 28% uninvolved miscues, except on story 61.

High groups from second-grade on up have very much higher percents of uninvolved miscues (34 to 49%). The one exception is the 6H group, whose percent of uninvolved miscues (24%) is

nearer the range of average groups. These high groups are producing a much wider variety of miscues than low and average groups. Almost half the miscues of the 8H and 10H groups reading story 60 do not involve word level substitution.

Table 4-10

Miscues Involving Word Level Substitutions

Low Group	Involved	Not Involved
2L	74.0	26.0
4L	81.5	18.5
6L	87.7	12.3
8L	84.8	15.2
10L59	87.5	12.5
10L61	86.2	13.8
Mean	83.6	16.3
<b>Average Group</b>		
2LA	80.2	19.8
2HA	89.1	10.9
4A	92.3	7.7
6A	75.2	24.8
8A	72.6	27.4
10LA60	72.7	27.3
10LA61	82.0	18.0
10HA60	71.7	28.3
10HA61	79.2	20.8
Mean	79.4	20.5
<b>High Group</b>		
2H	61.1	38.9
4H	63.3	36.7
6H	76.4	23.6
8H60	57.2	42.8
8H61	64.7	35.3
10H60	51.7	48.3
10H61	65.1	34.9
Mean	62.7	37.2
Grand Mean	75.2	24.7

Since higher groups have lower MPH, the figures presented in this section on graphic and phonemic proximity tend to involve lower percents of smaller numbers of miscues for the high groups.

The graphic and phonemic relationships between the OR and the ER are scored on a ten point scale. For purposes of analysis, we have combined points on the scale and arrived at the following four categories.

### Graphic and Phonemic Proximity Scale

		Graphic Proximity	Phonemic Proximity
I (no)	0	no similarity	no similarity
II (low)	1	common letters	common sounds
	2	key or middle element	key or middle element
	3	ending	ending
III (moderate)	4	beginning	beginning
	5	beginning and middle	beginning and middle
	6	beginning and end - middle and end	beginning and end - middle and end
IV (high)	7	beginning, middle and end reversal of three or more letters	beginning, middle and end reversal of three or more letters
	8	single element difference	single element difference
		reversal of two letters	reversal of two sounds - intonation shifts
	9	homographs	homophones
		dialect	

Tables 4-11 and 4-12 show the percents of graphic and phonemic proximity occurrences within the four categories discussed above.

#### High (7-9) Proximity

The percent of miscues with high proximity is relatively high for all groups except for the 2L readers. The 2L readers have a very low percent of graphic and phonemic miscues at this level, and the 6H readers have the highest graphic involvement here. The 6A and 10H (story 61) readers have the highest phonemic involvement. (Individuals in these groups are discussed in more detail later.) Most groups have 70 to 85% miscues with moderate or high graphic and phonemic proximity. The notable exceptions are three groups reading story 60 (10HA, 8H, and 10H). On graphic proximity, they show a shift toward low proximity (20% or more) and comparatively high rates of miscues with no graphic proximity. On phonemic proximity, the shift in these groups and in the 10LA group on story 60 as well is toward no proximity (about 25% except for 10H).

Table 4-11

## Graphic Proximity of Word Level Substitution Miscues

Low Group	None 0	Low 1-3	Moderate 4-6	High 7-9
2L	22.4	28.7	36.8	12.1
4L	8.0	18.6	40.6	32.9
6L	3.9	8.2	49.2	38.6
8L	11.6	9.7	35.5	43.3
10L59	5.4	9.7	43.8	41.1
10L61	4.5	5.3	49.2	41.2
Mean	9.3	13.3	42.5	34.8
Average Group				
2LA	10.5	10.9	36.1	42.5
2HA	8.5	8.5	43.4	39.4
4A	5.7	11.7	48.0	34.5
6A	8.3	8.8	33.8	49.1
8A	10.1	11.7	37.6	40.4
10LA60	10.7	19.9	38.2	31.0
10LA61	8.4	6.3	42.2	43.0
10HA60	12.9	20.0	34.0	33.0
10HA61	11.2	9.7	32.1	47.1
Mean	9.5	11.9	38.3	40.0
High Group				
2H	15.6	16.2	37.6	30.5
4H	9.2	12.4	29.7	43.7
6H	11.1	10.0	23.8	55.1
8H60	15.9	21.2	33.9	29.0
8H61	7.5	10.4	39.8	42.2
10H60	11.4	22.0	29.6	37.2
10H61	5.5	7.1	39.4	48.1
Mean	10.8	14.1	33.4	41.5

Table 4-12

Phonemic Proximity of Word Level Substitution Miscues

Low Group	None 0	Low 1-3	Moderate 4-6	High 7-9
2L	40.8	20.2	25.3	13.8
4L	24.9	14.0	32.9	28.2
6L	10.1	6.6	48.2	35.0
8L	16.9	9.3	35.3	38.5
10L59	10.5	8.1	42.3	39.0
10L61	7.1	5.1	50.2	37.6
Mean	18.3	10.5	39.0	32.0
<b>Average Group</b>				
2LA	18.2	9.5	34.8	37.6
2HA	12.6	9.3	44.0	43.1
4A	13.3	9.4	45.7	28.6
6A	17.2	2.6	27.7	48.9
8A	15.8	9.9	37.0	37.3
10LA60	25.0	11.9	33.9	29.0
10LA61	11.4	6.7	41.4	40.5
10HA60	25.1	10.4	34.7	29.8
10HA61	17.0	7.3	33.5	42.3
Mean	17.2	8.5	36.9	36.4
<b>High Group</b>				
2H	25.3	9.7	33.7	31.1
4H	19.5	6.0	31.9	42.7
6H	17.8	7.9	29.2	45.1
8H60	26.0	14.3	30.1	29.7
8H61	11.0	7.0	43.9	38.2
10H60	18.8	12.8	30.8	37.6
10H61	7.9	6.3	37.0	48.8
Mean	18.0	9.1	33.8	39.0

The 4L group falls to a combined total of 61% substitution miscues in the moderate and high phonemic proximity categories because of its high percent (25%) of zero proximity miscues. The 2H group shows a similar shift, with 65% of its miscues with high or moderate phonemic proximity and 25% with zero proximity. The group which stands out, however, is the 2L group, with only 39% high or moderate phonemic proximity and 41% zero proximity.

#### Moderate ( 4-6) Proximity

Only three groups, 2L, 6A, and 6H show less than 30% miscues coded as moderate phonemic proximity. In the latter two groups this is offset by unusually high percents of high proximity miscues (over 45%). The 4H, 6H, and 10H groups (story 60) show less than 30% moderate graphic proximity. Both 4H and 6H show offsetting high percents of high graphic proximity miscues (over 48%). The 2L group with 37% moderate graphic miscues has only 12% high proximity.

Groups with over 40% moderate graphic proximity miscues (2HA, 4L 4A, 6L, 10L59, 10L61 and 10LA61) all have fairly high rates of high proximity miscues as well. This tends also to be true for groups with moderate phonemic proximity.

#### Low (1-3) Proximity

The over-all percent of substitutions in the low proximity category is considerably lower than the percent in either the moderate or high categories (under 10% for all miscues).

The largest and smallest percents in this category for graphic proximity are made by 2L readers (28.7%) and by 10L61 readers (5.3%), with other low groups falling between these two. For phonemic proximity the highest percent (20.2%) is made by 2L and the lowest (2.6%) by 6A readers. For the average readers the range is from 8.5% for 2HA to 20% for 10HA60. For the high readers, the range is again considerable and is even more interesting because both ends of the range are achieved by the same readers performing on different stories. On story 60 the 10H group has 22% involvement in the graphic proximity category, but on story 61, the percent is only 7.1%. Aside from 2L and 4L, only the four groups reading story 60 have more than 10% low phonemic proximity miscues. These same groups are the only ones other than 2L and 4L who are at or near 20% low graphic proximity. In all cases low graphic and phonemic proximity rates for story 61 are considerably lower than for the same groups on story 60.

#### No (0) Proximity

All groups show zero phonemic proximity percents that are higher than zero graphic proximity percents. More miscues sound



completely different than look completely different.

The 2L readers have the largest percent of miscues with zero graphic proximity and their phonemic proximity in this category is almost twice as great. In contrast, the 6L readers have the lowest percent of zero graphic proximity miscues. However, their pattern is similar to the 2L group in that their phonemic proximity percent is more than double the graphic proximity at the zero level.

We noted earlier the strong shift to zero phonemic proximity in groups reading story 60. The lowest rates for zero phonemic proximity seem to be in the low groups above grade four, the average groups below grade six, and most groups reading story 61. All of these groups may share a tendency to read more carefully than other groups.

Tables 4-11 and 4-12 present a broad picture of the readers' handling of word level substitutions. They support the conclusions in Chapter 3 that only the 2L and to a lesser extent the 4L group show any possible evidence of phonics difficulties. But it is often the case that individual achievement is blurred by the larger perspective. The following discussions narrow the focus, and individual performances are taken into consideration.

#### Graphic Mean Exceeds Phonemic Mean

Because reading involves interaction with visual symbols, readers rely more heavily on the graphic system than on the phonemic system. It follows then that the reader's graphic proximity is expected to be higher than his phonemic proximity. Our data bears out this expectation except in a few instances, which are discussed later. First, we will look at those readers who follow the expected procedure of producing a majority of miscues with higher graphic than phonemic similarity.

Excluding two readers whose graphic and phonemic proximity means are equal, and the few readers who have higher phonemic proximity means, over 80% of the subjects follow the expected trend. Figures 3-17 and 3-18 show the means for groups. Eighty percent of the individuals within the groups have graphic means that range from .1% to 1.5% higher than their phonemic proximity means.

Readers whose graphic proximity means exceed their phonemic proximity means (by 1% to 1.5%) are few in number, but bear investigation as they are representative of readers who are eminently concerned with visual information.

In this study, five readers (three in 4L, one in 2L and one in 2LA) constitute this group.

Subject	Group	Graphic	Phonemic	Difference
152	2L	4.2	2.8	1.4
205	2LA	5.1	4.1	1.0
195	4L	5.7	4.7	1.0
198	4L	4.3	3.1	1.2
200	4L	5.1	4.0	1.1

These five readers are all low except the 2LA reader and all in second or fourth grade. It is their phonemic means that are low rather than their graphic means being unusually high. Half of the 4L group are in this small number. It seems to indicate a tendency among low fourth graders to be more concerned with print than sound.

Figures 3-17 and 3-18 indicate that the means for the majority of the students range from 4.5 to 6.0 on the graphic proximity scale, with slightly lower phonemic means.

Exceptions to the majority range (means: 4.5 - 6.0) are the few readers at the low end of the scale (means: 2.3 - 4.4) and the few readers at the top end of the scale (means: 6.1 - 7.4).

#### Readers with Low Graphic and Phonemic Proximity Means

Approximately 12% of all the subjects in the study have a low range of graphic means (2.3 - 4.4). These subjects produce most of their miscues at graphic and phonemic proximity levels of 2 (key or middle element), 3 (ending element) or 4 (beginning element).

It is important to note that all subjects are able to achieve a graphic proximity mean of at least 2.3. There are in fact, only seven subjects whose mean was below 4.0.

The readers in the 12% whose graphic proximity means range from 2.3 to 4.4 are spread across grades and across levels: four 2L, one 4L, two 10LA60, one 6A, and two 2H, one 4H, four 8H, one 10H, and one 10HA (on both stories).

These readers have some commonalities in their miscues. The largest percent of miscues for each student is either at the 0 level (no similarity), at the 4 level (beginning element), or, for the older readers, at the 8 level (single element difference). Rarely is there an occurrence of a homograph or a homophone substitution (highest proximity level: 9). There also are few miscues at the 7 proximity level (beginning, middle and end elements in common, or reversal of three or more letters).

Although the Low and High readers in this 12% have similarities in their word substitution miscues, there are some differences.

The 2L readers are more greatly influenced by peripheral field:

0401 "Look up here!" said Jimmy.

0402 <sup>ⓐ</sup>Look  
Here is my blue airplane.

0405 "He had the blue airplane.

0406 <sup>ⓐ</sup>He  
Look for the red train.

All readers correct some 0 level miscues that are syntactically or semantically unacceptable (partially or totally). However the low readers in this 12% are less likely to correct these miscues than are the high readers.

2L "You are too <sup>help</sup> little," said Father

"He did not stop here," said Sue. <sup>him</sup>

<sup>Yes the</sup>  
Here is something you can do.

10LA ...and they kill <sup>you</sup> a fair number of people.

2H Sometimes <sup>ⓐ</sup>an <sup>ⓐ</sup> <sup>he</sup> thought that a scientist's...

8H ...holding on to himself hard because <sup>ⓐ</sup>he of sharp pain.

Also, the high readers in this 12% tend to leave uncorrected more low graphic and phonemic proximity miscues that are partially or totally syntactically and semantically acceptable.

2H ...who had fixed <sup>my</sup> the alarm.

Taking the clock <sup>in</sup> to the cellar...

Freddie dreamed that his teacher... <sup>of the</sup>

8H ...looked up <sup>at</sup> Ganderbai's number...

10H ...around the corner <sup>his</sup> of the mouth...

...I will have waked up <sup>the</sup> my boy on the...

The individual high readers with low proximity means seem to be using graphic information in reading in quite a different way from low readers although with some superficially similar effects. The examples of low proximity miscues taken from low readers tend to involve the substitution of nouns, verbs, and modifiers. The examples of proficient readers' low proximity miscues more often involve the substitution of one type of function word for another.

#### Readers with High Graphic and Phonemic Proximity Means

Now we are looking at those readers who deviate from the majority toward the high end of the proximity scale (6.1 - 7.4). These readers' over-all handling of visual information more consistently involves proximity levels of 6 (beginning and end elements, or middle and end elements), and 7 (beginning, middle and end, or reversal of three or more elements). Their phonemic proximity means are still slightly lower than their means for graphic proximity level.

Again about 12% of the total number of readers are in this category: one 2HA, one 4A, one 4H, two 6L, two 6A, two 6H, one 8L, two 10L (with one reader achieving a high graphic score on both stories 60 and 61), two 10LA, one 10HA and one 10H. There are about the same number of subjects at all reading levels except at the high reading level. The 2.0 - 4.4 group has eight readers in high reading groups, but the 6.1 to 7.4 group has only four readers' in high reading groups.

Twelve of these sixteen readers make their highest percentage of miscues at the 8 graphic proximity level (single element difference or the reversal of two letters) and their next highest at the 9 level. The remaining four readers reverse this, making the highest percent of their miscues at the 9 level and the next highest at the 8 level. There are a large percent of miscues involving proximity levels 5 and 6. The lowest percent of miscues are at the 1 level (common letter), followed by 2 level (key or middle element), followed by 3 level (ending element). The average percent at the 0 level, for these readers, was 6.4%. Two younger readers have the top percents at this 0 level: a 2HA reader at 15.2% and a 4A reader at 11.4%. Three older readers have less than 1% zero proximity: one each in 6L, 10H61, 10L61.

Word substitutions involving dialect constitute a large percentage of miscues made by the readers in this group. These are marked 9 at the graphic level and 8 at the phonemic level:

OR:	name	Indian	they	it	Peggy	leave
ER:	named	Indians	they're	it's	Peggy's	leaves

A few homographs (e.g. live, read) are substituted by many of these readers.

Non-words also make up a large percent of the substitutions:

OR:	tri	\$camp	\$droove	\$impiril	\$row+line
ER:	tribe	camp	drove	imperl	routine
OR:	\$desert	\$gropping	\$scaps	\$quayver	
ER:	desert	groping	scaps	quiver	
OR:	\$dist+ently	\$in=tellikch	\$sev=ered		
ER:	distinct	intellectual	severed		
OR:	\$rust+tle	\$en+ded			
ER:	rustle	ended			

These readers often substitute plural for singular endings, frequently correcting syntactically unacceptable structures.

Parts  
Part of your education...  
The nimble <sup>beasts</sup> beast leaped...  
But the <sup>facts</sup> fact is we have...

Some of the miscues of these readers are substitutions of syntactically acceptable words:

6L ...with two <sup>strong</sup> ~~stranges~~ straight sticks and some string.

Billy <sup>lowded</sup> ~~lived~~ loved all the wild animals.

10H who enjoyed <sup>handling</sup> handing out medals.

6H ...lambs were <sup>bending</sup> bedding down for the night...

...didn't have luck hunting <sup>along</sup> alone.

...and ran <sup>tightly</sup> lightly up the slope...

...and <sup>leaping</sup> leading Chip toward the brow...

...tangle of <sup>flashing</sup> slashing coyotes.

...Billy was <sup>talking</sup>walking through the forest.

...to the cranberry <sup>swap</sup>swamp.

#### Phonemic Means Exceed Graphic Means

In the few instances where the phonemic mean is higher than the graphic correspondence mean, the reader is, in general, attending primarily to meaning and grammar, rather than to sound or print. Our data indicates that fourteen readers have an over-all phonemic correspondence that ranges from .1% to .7% higher than their graphic proximity mean (Table 4-13).

Ten of these readers are in high groups (five in 10H, four in 8H, one in 2H), one in 10HA, three in average groups (one in 8A, one in 6A) and one reader is in 2L.

Table 4-13

#### Phonemic Proximity Means Higher than Graphic Proximity Means

Subject Number	Group	Graphic Mean	Phonemic Mean	Difference
144	2L	3.3	3.4	.1
131	2H	4.7	4.9	.2
221	6A	5.6	5.7	.1
227	8A	5.6	6.1	.5
172	8H60	4.4	4.7	.3
179	8H60	5.0	5.3	.3
173	8H61	5.9	6.0	.1
184	8H61	5.7	6.4	.7
246	10HA60	5.4	5.5	.1
251	10H60	3.7	3.9	.2
254	10H60	5.3	5.8	.5
255	10H60	4.6	5.2	.6
251	10H61	5.7	5.9	.2
256	10H61	5.9	6.0	.1

The number of miscues resulting in phonemic proximity that is higher than graphic proximity are few in number and occur to some degree with almost all readers. However, they tend to occur most frequently in the oral production of confident readers and are indicative of understanding the story.

The substitution of the for a and vice-versa is probably the most frequently occurring example of a miscue with higher phonemic proximity.

Many substitutions involve dialect or the reader's choice of words and again, are an indication of the reader's grasp of the meaning.

Rarely do these miscues change the grammatical structure of the sentence, but when there is a change, it is not disruptive to the total meaning of the story:

I  
I've been waiting to cough.

...he tied the tubing, <sup>; tied it</sup> tight with a knot.

...our teacher <sup>said</sup> says if you know...

If you have <sup>had</sup> a contest...

...the things that <sup>laid</sup> lay there.

Some miscues are interesting in that they are indicative of good guessing, interpretation, involvement and understanding on the part of the reader.

Young dissidents have been <sup>wildly</sup> widely berated...

This baby isn't typical he <sup>mourned</sup> moaned...

It must give some protection... <sup>him</sup>

#### Grammatical Factors in Reading

The data reported in Chapter 3 and above in Chapter 4 have shown that all readers are using and responding to syntactic, or grammatical cues in their reading. Particularly, the strong relationship between syntactic acceptability and correction has been shown. In this section we more fully explore the functioning of grammar and grammatical cues in our subjects' reading.

Since grammar is the rule-governed structure through which meaning is conveyed in language, the reader must assign a grammatical structure to each sequence as he reads in order to get to meaning. He does this by picking up surface structure cues and inferring, or guessing at the structure he is dealing with. He is able to do so, because he knows the rules by which language



is generated and the relative likelihood of particular patterns occurring. He uses redundancy in surface structures, features that are highly predictable once another feature is known, to assign the structure. For example, the reader knows that adjectives precede nouns they modify in noun phrases.

The reader's processing of grammatical features is no less vital than his use of graphic features. Several facets of miscue analysis provide evidence of how readers use and respond to grammatical cues in reading.

#### Getting to the Deep Structure: Transformation

Observed responses often appear to reflect manipulations of the deep structure or of the rules by which a surface structure is generated once a deep structure has been assigned.

The reader cannot know directly what underlying structure the writer had in mind. He must use cues in the surface structure to infer the deep structure.

The possibilities, then, are these:

1. He may infer a deep structure other than the author's. We include here observed responses that indicate a potential deep structure even if the reader never fully represents it with a surface structure.
2. The reader may, through a dialect difference, have a different rule or set of rules for producing a variant surface structure for the same deep structure.
3. There may be optional rules available which produce alternate surface structures. An example is the optional clause marker in a sentence like "I thought (that) he would go." What the reader produces as surface structure (OR) reflects choice of a different option than the author's.
4. The reader may lose the deep structure entirely, perhaps producing a surface structure which is a garble.

And of course the reader may retain the deep and surface grammatical structures even when changing or losing meaning. The reader who responds to the text form He saw a little fawn with He saw a little fox has substituted a noun for a noun, preserving the grammatical features of the text, and not effecting any transformation.

On the other hand, the surface structure of the expected and observed responses is at variance when He has gone to the store is read as He gone to the store. The resultant transformation does not, however, result in any deep structure change because



the alternate rules available in the reader's dialect preserve the deep structure and meaning. A similar situation obtains when the reader processes the printed One of them tore chunks of fur from her neck while the other slashed a hind foot as One of them tore chunks of fur from her neck. The other slashed a hind foot. This use of an optional surface structure form that does not involve dialect results in the preservation of the original meaning, and also the deep structure.

When the reader cannot handle the grammatical structure of the text, or produce an alternative acceptable structure, the deep structure becomes lost. The substitution for None of the chemicals was harmful with Known of the chemicals was harmful suggests an inability to process the grammatical structure or meaning of the expected response. There is a vast difference between losing the deep structure and producing a different one. Meaning is not dependent upon ability to retain the grammatical structure of the original. For example, the substitution of a nonsense word with a verb-type ending can be regarded as a verb in the observed response, OR: We \$hurned home to see the fire, RR: We hurried home to see the fire. This retains the grammatical form of the text but lacks any meaning. It is sometimes possible for a reader to operate through a different deep structure yet retain the meaning as in I'm going to give you an injection of serum for the printed I'm going to give you an injection. Serum. Such examples provide evidence for our conclusion that deep grammatical structure and meaning are separable. The reader gets to meaning and then assigns a new deep structure.

The percent of miscues that involve no transformation is successively higher among low readers in successively higher grades. The 10L group has similar percents for both stories read. This pattern is in sharp contrast to the average and high readers who tend to cluster at all grades at about 35%. The high readers in grades two and four are lower (about 27%) and the 6H group goes up to 44%. All groups which read story 61 had a higher percent of miscues with no transformation than they had on the easier story they read (see Table 4-14).

A very serious type of miscue is that which involves a loss of deep structure. Among low readers there is a steady decline from grade to grade until grade ten in percent of miscues involving this loss of deep structure. This may partly reflect a greater tendency to focus on words rather than meaning in earlier grades and partly reflect a stronger tendency to omit unfamiliar words. Low readers in grades eight and ten are down below 10% on this type of miscue, though 10L goes up but only to 11.5% on story 61.

Average readers above grade four and all high readers show few miscues where deep structure is lost. Groups 2IA, 2HA, and 4A are below 12% while all other average and high groups are

Table 4-14

## Transformation By Group

## Low Groups:

Grade	No Trans- formation	Diff. Deep Structure	Same Deep Structure	Alternate Option	Deep Structure Lost
2	14.5	53.2	3.4	.4	28.5
4	24.4	48.5	4.6	1.4	21.1
6	27.0	33.9	20.0	.4	18.7
8	30.6	53.3	8.9	.8	6.3
10/59	43.7	32.2	13.5	3.4	7.2
10/61	46.6	29.4	10.7	1.8	11.5
Mean	31.1	41.8	10.2	1.4	15.6

## Average Groups

2LA	39.7	44.2	2.3	2.0	11.8
2HA	37.0	44.2	8.3	2.9	7.6
4	36.9	44.8	5.6	2.4	10.3
6	34.5	48.4	9.2	5.9	2.0
8	33.8	48.5	1.4	11.2	5.2
10LA60	35.9	48.8	3.1	9.1	3.1
10LA61	50.0	38.9	.7	3.5	6.9
10HA60	33.2	57.1	2.3	5.7	1.8
10HA61	46.9	41.9	.8	6.2	4.3
Mean	38.7	46.3	3.8	5.4	5.9

## High Groups

2	27.8	62.3	.4	5.2	4.4
4	27.1	59.2	.7	7.5	5.5
6	43.6	45.0	3.3	6.8	1.0
8/60	35.2	41.3	3.3	14.9	5.4
8/61	43.1	38.6	0.0	15.4	3.0
10/60	36.8	43.5	3.2	16.6	0.0
10/61	46.4	44.4	0.0	8.8	.5
Mean	34.3	47.8	1.6	10.7	2.8

between 0 and 5.9% except 10LA on story 61 which goes up to 6.9%, double its percent on story 60. The 10NA group also has a higher percent of miscues with deep structure loss (4.3%) on 61. Neither 8H or 10H show such a pattern, however.

So far the data shows a common ability of readers even in second-grade who are of average proficiency or better to achieve a deep structure. Only the low groups show any developmental pattern in acquiring this ability. Beyond that there is some variation probably due to the specific reading tasks. In this regard it is interesting that on the more difficult task (story 61) 8H and 10th grade readers actually had fewer miscues involving transformations.

But it is also important to examine the tendency of readers to produce a different deep structure. The low readers show a decline in percent of miscues involving changed deep structure, except the 8L group which about equals the 2L group. Average groups are remarkably similar (44 - 48%) except for the tenth grade groups. The 10LA group goes down on story 61 to 38.9% from 48.8% on story 60. The 10HA group drops to 41.9% from 57.1%.

High groups are in roughly the same range (41 - 48%) except in the 2H and 4H groups which are higher (62.3 and 59.2%) and the 8H group in 61 which drops to 38.6%.

The reason for the high percents for shifts in deep structure among 2H and 4H may reflect greater problems dealing with redundancies in relatively complex patterns. Group 2H read story 51 which was also read by the 4A group. The latter had 44.8% miscues with changed deep structure.

Group 4H read story 53. Their percent (59.2) compares with 48.4% for 6A and 53.2% for 8L.

One cannot conclude that a high percent of miscues with a change in deep structure directly indicates ineffective reading. These transformations which produce unacceptable syntax are more likely to be corrected and the ultimate effect is the important one. Apparently, a fairly high percent of miscues at all grades and levels of proficiency are likely to involve prediction of a deep structure other than what the author had intended. Many of these changes in deep structure, however, are syntactically acceptable.

One type of transformation miscue with a tendency to increase with proficiency is that which produces an alternate surface structure through the use of rule options. Among average and high readers in grades eight and ten these reach as high as 16.6%. All high groups are over 5% while low groups are 2LA, 2HA, and 4A groups have negligible amounts. While some of this difference may reflect simpler syntax in the reading tasks it also seems to reflect the lessening concern with word for word accuracy as

effectiveness in dealing with structure and meaning increases. As Table 4-15 indicates this pattern of increased percent of use of alternate options holds for every grade.

Table 4-15

		Percent of Miscues with Alternate Optional Surface Structures					
Grade		2	4	6	8	10	
Group							
Low		.4	1.4	.4	.8	3.4/59	1.8/61
Average		2.0	2.4	5.9	11.2	9.1/60	3.5/61
High Average		2.9				5.7/60	6.2/61
High		5.2	7.5	6.8	14.9/60	15.4/61	16.6/60 8.8/61

Groups with high percent of dialect miscues produce corresponding percents of miscues with the same deep structure but different surface structures. Because the rules for generating deep structure differ in the two dialects surface structures differ while deep structures stay the same. The low groups tend to produce more dialect miscues. The 6L group reaches 20% of such transformations. Average groups are variable while high groups never exceed 3.3%.

#### Syntactic Acceptability

In Chapter 3 data on range and mean of percent of syntactically acceptable miscues was presented. The data demonstrated a tendency for more proficient readers to produce miscues with syntactic acceptability. Table 4-16 shows data for all groups and all sub-categories of syntactic acceptability.

While the organization of a sentence is based upon syntactic and semantic considerations, it is possible for a sentence to be perfectly acceptable grammatically yet semantically anomalous. The syntax of Canaries are very vicious dogs can be adjudged acceptable because of its grammatical pattern -

Plural Noun + Copula + Intensifier + Adjective + Plural Noun  
(plural)

- yet the semantic aspect is obviously unacceptable.

The ability to process syntactic features is not, then, dependent upon ability to handle meaning. It is quite possible for a reader to substitute with words of the same grammatical category and function as the expected response, yet generate sentences that are semantically unacceptable.

Table 4-16

## Syntactic Acceptability by Group

Grade	No	Low		Totally Acceptable
		Acceptable with Prior	Acceptable with After	
2L	31.9	19.6	8.1	40.4
4L	30.3	21.5	6.3	41.2
6L	26.7	24.0	9.2	40.1
8L	16.9	20.9	7.7	51.7
10L59	11.2	20.0	7.6	60.4
10L61	20.5	22.1	14.9	42.6
Mean	22.9	21.4	9.0	46.1
Average				
2LA	13.4	14.6	2.8	68.4
2HA	12.1	19.8	10.5	56.3
4A	13.3	24.7	7.4	53.3
6A	5.0	15.2	3.3	75.2
8A	6.5	17.0	4.8	71.1
10LA60	4.0	18.5	3.6	73.4
10LA61	10.7	25.3	5.5	56.7
10HA60	4.4	14.7	2.3	78.1
10HA61	7.8	17.1	8.2	66.1
Mean	8.5	18.5	5.3	66.5
High				
2H	17.1	19.8	6.0	54.0
4H	9.2	17.5	5.5	65.8
6H	5.6	21.0	8.7	64.5
8H60	7.4	9.0	3.7	77.9
8H61	5.5	15.4	7.5	71.3
10H60	2.0	7.5	.8	80.4
10H61	2.1	14.4	2.6	88.4
Mean	6.9	14.9	4.9	71.8

The Taxonomy incorporates syntactic features of responses into its framework, and analyzes these in relation to their total acceptability, total unacceptability, or partial acceptability. Partially acceptable responses can be acceptable with prior portions of the text only, that is, up to and including that part of the sentence at which the miscue occurs; with portions of the text including and following the point at which the miscue occurs; and within the sentence only, as distinct from the entire text.

There is a sharp difference between low groups and average and high groups in percent of miscues fully acceptable syntactically. Low groups have about 40% acceptable miscues until 8L, which moves up to 52%. The 10L group hits 60% on story 59 but drops back to 44% on story 61. There is a corresponding steady drop in percent of totally unacceptable miscues, falling from 32% in 2L to 11% in 10L on story 59, but then bouncing up to 20.5% for 10L on story 61. For low groups there is only slight variation in percent of miscues partially acceptable.

All average and high groups have better than 50% miscues totally acceptable syntactically. This rises in the 10H group to 89% on story 60 and 80% on story 61. High readers show a steady increase in percent fully acceptable. Average groups vary with the 2LA at 68% and sixth through tenth above 70%, except for the 10LA and 10HA reading story 61 (57% and 66%). All groups had lower percents on story 61.

All average groups above fourth-grade and high groups above second-grade have less than 10% unacceptable miscues except 10LA on story 61 (10.7%). This drops to 2% for 10H and 4% for 10LA and 10HA on story 60.

Percent of partially acceptable miscues tends to be lower for average and high groups than for low groups. For all groups reading story 61 there were higher percents of partially acceptable miscues than on the other task.

The data on syntactic acceptability of miscues shows there is a tendency for syntactic acceptability to increase with reading proficiency with corresponding reduction in both partial and full unacceptability. Low readers above sixth-grade do increase the syntactic acceptability of their miscues particularly if the story is not too difficult. Even high readers in eighth and tenth-grade drop somewhat in producing syntactically acceptable miscues on a more difficult task.

Syntactic Proximity. When a miscue is judged syntactically acceptable in the passage or in the sentence, it is further judged on the degree of syntactic distance between the ER and OR using a ten point scale.

A mean score, the syntactic proximity score, is calculated

Figure 4-2  
 Syntactic Proximity of Low and Average Groups:  
 Ranges and Means

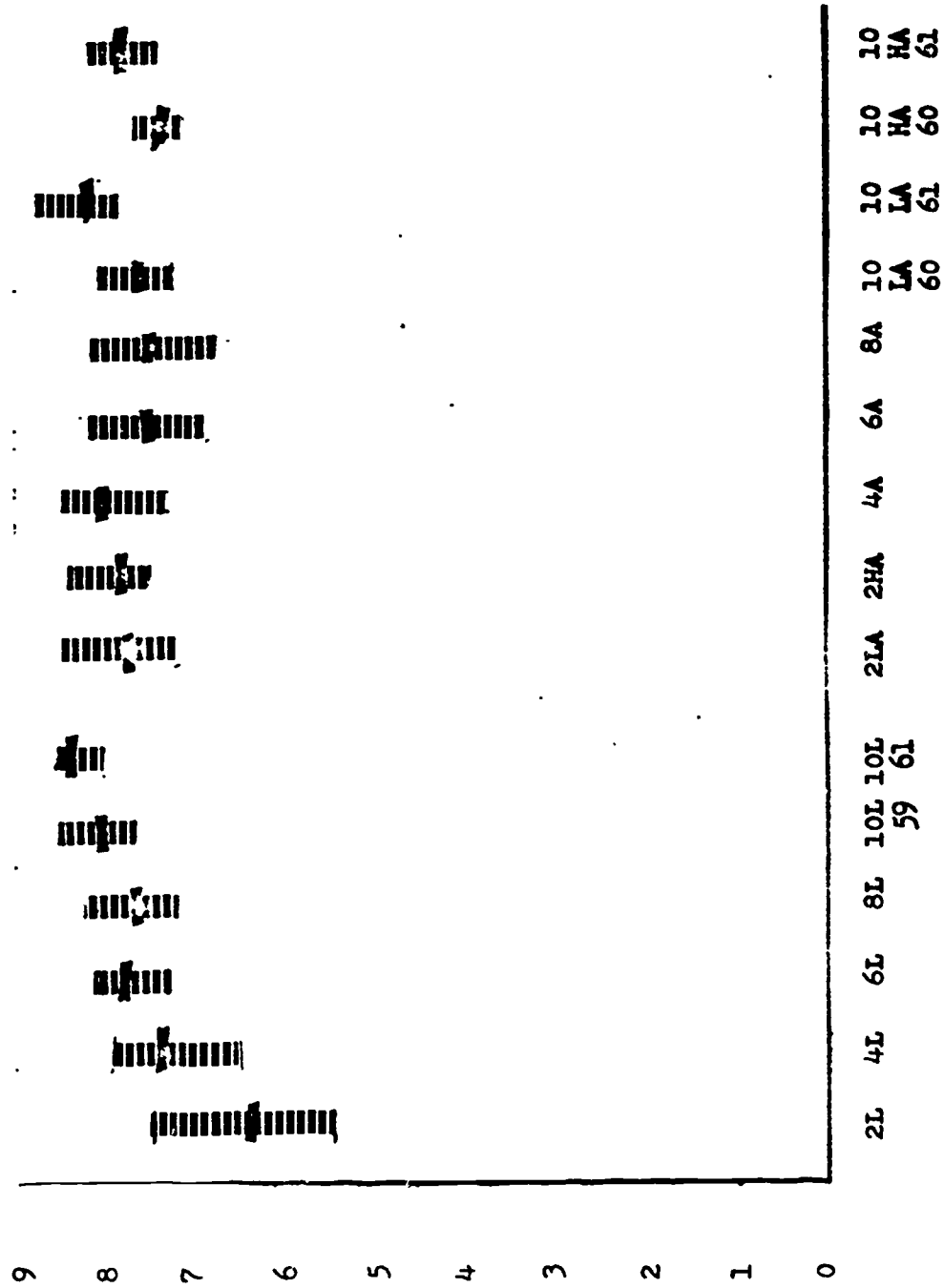
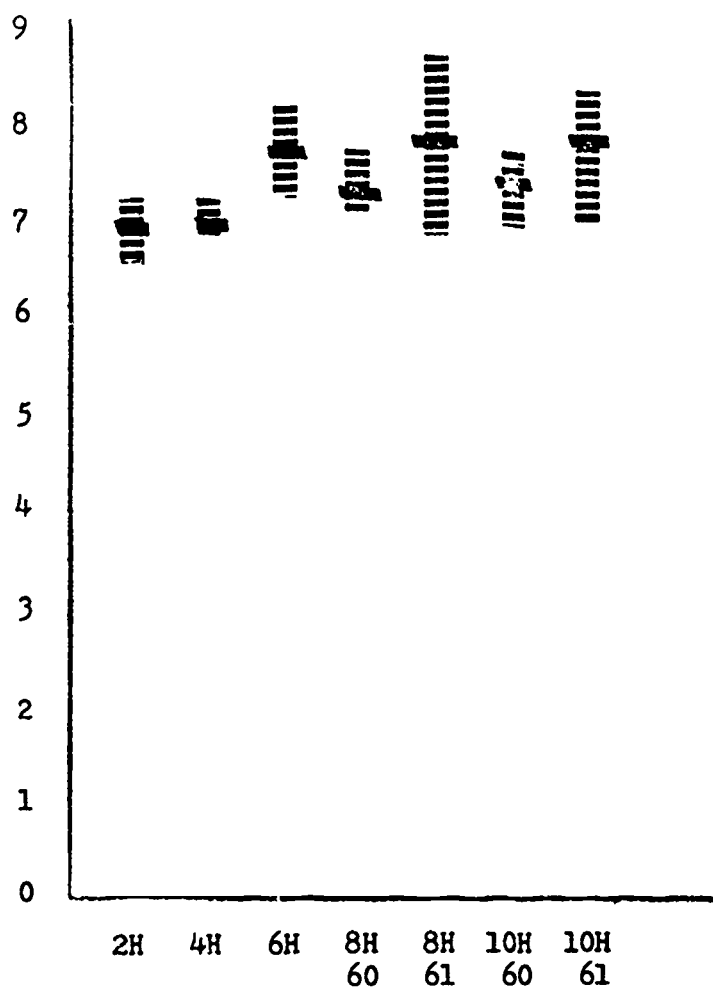


Figure 4-3

Syntactic Proximity of High Groups:  
Ranges and Means





for each subject. Figures 4-2 and 4-3 show the ranges and means for these scores by groups. Keep in mind that only those miscues judged syntactically acceptable are included here. It is apparent from these group figures that most syntactically acceptable miscues involve only minor changes.

Only the low groups show any kind of developmental pattern. They show successively higher ranges and means. This is interesting considering that low groups also tend to show successively higher percents of syntactically acceptable miscues and decreasing percents of unacceptable ones. Low readers in higher grades seem to handle syntactic patterns more successfully and more carefully.

Average groups show no similar pattern, and in fact 6A, 8A, and the two tenth-grade average groups reading story 60 show lower ranges and means than average second and fourth-graders.

The 10LA and 10HA groups show higher means and ranges for story 61, as do all groups reading story 61, than on their other reading task. This contrasts with the figures for syntactic acceptability (Table 4-16). All groups reading story 61 had lower percents of syntactically acceptable miscues than on the easier task. This indicates that these readers produce less acceptable miscues but with less syntactic shifting on a more difficult task.

Aside from the differences on the two stories, high groups show only minor differences in means, though 2H and 4H readers do show lower means (about 7%) and ranges.

Table 4-17 views the same data somewhat differently. It shows the percent of syntactically acceptable miscues which had no (0), low (1 - 3), medium (4 - 6) and high (7 - 9) proximity.

Very few syntactically acceptable miscues had no syntactic relationships between ER and OR. Less than 3% of the acceptable miscues of low, average and high groups had low syntactic proximity though three groups 2L (7.5%), 2H (9%) and 6H (4.8%) were substantially higher.

The low groups again show something of a developmental pattern. There is a substantial increase in percent of high proximity miscues in successively higher grades, while low and medium proximity percents decline.

Miscues with medium proximity decline to 20% or less of acceptable miscues for 10L (both stories), 2HA, 4A and 6H groups, but comes back up to near 30% for average and high eighth and tenth-graders. This is true except on story 61, which shows lower percents for all groups than story 60, while high proximity percents increase on story 61. The more difficult task causes a shift from medium to high proximity as percent of syntactic

Table 4-17

## Syntactic Proximity of OR to ER by Group

Grade	Low				(including % of no change)
	None	Low	Medium	High	
2L	2.1	7.5	44.1	46.3	(27.4)
4L	0	3.3	32.0	64.8	(49.0)
6L	0	1.0	26.6	72.6	(64.0)
8L	0	3.5	25.4	71.1	(52.8)
10L59	.2	.7	18.6	80.7	(63.6)
10L61	0	.5	17.6	89.8	(73.8)
Mean	.4	2.75	27.38	70.88	
Average					
2LA	0	2.5	25.9	71.5	(55.2)
2HA	0	1.3	20.5	77.6	(53.2)
4A	0	2.4	18.9	78.6	(65.0)
6A	0	.9	28.9	70.2	(41.8)
8A	0	3.0	30.8	66.2	(37.0)
10LA60	0	2.3	23.6	74.2	(42.3)
10LA61	0	1.2	18.2	80.6	(59.4)
10HA60	.3	2.7	29.7	67.3	(31.7)
10HA61	0	2.3	18.4	79.4	(48.9)
Mean	.05	2.0	23.8	73.9	
High					
2H	0	9.0	34.0	56.9	(36.8)
4H	0	1.5	45.4	53.0	(30.8)
6H	0	4.8	20.9	74.3	(51.6)
8H60	.3	1.2	37.4	61.1	(27.0)
8H61	0	0	28.4	71.6	(46.3)
10H60	.4	2.2	27.6	69.7	(32.0)
10H61	0	.6	21.7	77.7	(47.8)
Mean	.1	2.7	30.7	66.3	

acceptability declines somewhat.

There seems to be, in this data, an indication that more effective readers beyond the early grades are likely to level off in their concern for syntactic accuracy and produce slight to moderate syntactic changes in syntactically acceptable miscues.

This is supported by comparing the percent of high proximity miscues with the included percent of miscues with no syntactic change. While most of the high proximity miscues of low groups have no syntactic change, average and high groups show very large percents of high proximity miscues with slight changes. As might be expected, groups reading story 61 show considerably higher percents of miscues with no syntactic change than they show on the other task. Non-word substitutions which are considered syntactically acceptable, if they retain expected intonation and/or inflection, would be coded "no change" in syntactic proximity. This may explain the tendency of less proficient groups to have higher percents of miscues which do not change syntax.

#### Grammatical Function Substitutions

When a reader substitutes one word for another it will have the same or a different grammatical function.

The reading of The foxes were too swift for the pursuers as The flies were too swift for the pursuers results in the substitution of the noun foxes with the noun flies, that is, the grammatical function of the expected response has been preserved. However, the rendition of We lifted up the flap of the circus tent as We lifted up the flap of the circus, with its omission of the noun tent, results in the change of circus from a noun modifier to a noun.

Table 4-18 shows the percent of matching substitutions of grammatical functions, instances where a noun was substituted for a noun, verb for verb, etc.

Second grade readers (except 2LA) and low readers below tenth-grade have 70 - 80% noun for noun substitution. Group 4A has 78% such substitutions but all other groups have between 82 - 98%.

Verb for verb substitution presents a different pattern. In second, fourth, sixth and eighth-grades more proficient readers make higher percents of verb for verb substitutions. Among low groups percents go up from grade to grade as well (2L - 50%, 4L - 68%, 8L - 73%, 10L59 - 88%). All groups reading stories 60 and 61 have lower verb for verb substitutions on story 61 than on story 60 (no such pattern exists for noun for noun substitutions). High groups all have above 84% verb for verb substitution except 8H reading story 61 (79%). Average groups other than 4A and 6A and 10HA on story 61 all have 80% or over.

Table 4-18

Percent of Matching Grammatical Function Substitution

Grade 2						Grade 4					
	N	V	NM	VM	FW		N	V	NM	VM	FW
2L	70	50	8	29	46	4L	73	63	67	25	52
2LA	87	80	67	33	70	4A	78	68	58	15	56
2HA	72	83	66	17	74	4H	84	84	36	33	79
2H	70	92	33	44	60						

Grade 6						Grade 8					
	N	V	NM	VM	FW		N	V	NM	VM	FW
6L	78	68	58	16	56	8L	71	73	67	60	68
6A	91	76	67	60	80	8A	84	83	50	60	90
6H	91	83	63	65	84	8H60	82	86	33	91	76
						8H61	98	79	85	33	83

Grade 10					
	N	V	NM	VM	FW
10L59	92	88	69	90	88
10L61	83	78	73	3	80
10LA60	91	84	20	69	73
10LA61	87	81	67	-	70
10HA60	83	87	60	100	52
10HA61	85	69	89	-	80
10H60	88	96	-	57	79
10H61	95	84	90	100	100

Table 4-19

Percent of Grammatical Function Substitutions

		OR Group 2L							
		N	V	NM	VM	FW	IND	CON	NO.
ER	N	70	10	3	0	7	9	1	70
	V	18	50	2	2	18	2	2	50
	NM	38	8	8	0	50	0	0	12
	VM	0	42	0	29	29	0	0	7
	FW	15	17	4	6	46	4	8	49
	IND	0	0	50	0	50	0	0	2
	CON	0	0	0	0	0	0	0	0
	NO.	69	44	7	6	46	12	6	

		OR Group 4L							
		N	V	NM	VM	FW	IND	CON	NO.
ER	N	73	5	3	1	9	6	2	94
	V	13	63	1	0	10	9	3	69
	NM	19	5	67	0	10	0	0	21
	VM	14	0	11	25	36	14	0	28
	FW	1	15	7	8	52	7	0	60
	IND	0	0	0	0	25	75	0	4
	CON	0	0	0	0	0	0	0	0
	NO.	93	59	25	13	59	23	4	

		Group 6L							
		N	V	NM	VM	FW	IND	CON	NO.
	N	78	6	8	0	2	8	0	67
	V	8	68	6	2	5	12	0	65
	NM	23	3	58	0	13	3	0	31
	VM	8	0	23	16	23	31	0	13
	FW	19	14	5	0	56	5	2	43
	IND	0	0	0	0	0	0	0	0
	CON	27	0	0	0	18	9	46	11
	NO.	76	55	32	3	37	21	6	

		Group 8L							
		N	V	NM	VM	FW	IND	CON	NO.
	N	71	8	2	0	8	4	6	48
	V	20	73	0	5	3	0	0	40
	NM	21	0	67	0	12	0	0	33
	VM	0	20	0	60	20	0	0	5
	FW	16	5	3	0	68	5	3	38
	IND	6	0	0	0	0	94	0	18
	CON	11	11	0	0	44	0	33	9
	NO.	57	37	24	5	40	21	7	

		Group 10L59							
		N	V	NM	VM	FW	IND	CON	NO.
	N	92	2	5	0	2	0	0	64
	V	3	88	3	0	3	3	0	34
	NM	17	3	69	0	3	8	0	36
	VM	0	0	0	90	10	0	0	10
	FW	8	0	4	0	88	0	0	
	IND	0	0	0	0	0	0	0	0
	CON	0	0	0	0	0	0	0	0
	NO.	68	32	30	9	26	4	0	

		Group 10L61							
		N	V	NM	VM	FW	IND	CON	NO.
	N	83	2	3	3	6	2	2	66
	V	11	78	2	2	0	4	2	46
	NM	18	0	73	3	0	6	0	33
	VM	0	0	33	33	0	33	0	3
	FW	5	0	5	0	80	5	5	20
	IND	0	0	0	0	0	0	0	0
	CON	0	0	0	0	0	0	0	2
	NO.	67	37	29	5	21	7	4	

Table 4-19 (Cont'd)

Group 2LA

	N	V	NM	VM	FW	IND	CON	NO.
N	87	4	4	0	3	1	0	70
V	3	80	3	0	3	12	0	34
NM	14	0	67	0	14	6	0	36
VM	33	0	0	33	33	0	0	3
FW	12	6	0	0	70	9	3	33
IND	0	0	0	0	0	0	0	0
CON	0	0	0	0	100	0	0	1
NO.	72	32	28	1	33	10	1	

Group 2HA

	N	V	NM	VM	FW	IND	CON	NO.
N	72	4	7	2	13	0	4	56
V	3	83	0	0	13	3	0	39
NM	13	6	66	0	16	0	0	32
VM	0	0	17	17	33	33	0	6
FW	7	13	2	2	74	0	2	46
IND	0	0	0	0	0	100	0	1
CON	0	0	0	0	50	0	50	2
NO.	48	42	27	3	54	4	4	

Group 4A

	N	V	NM	VM	FW	IND	CON	NO.
N	78	6	8	0	2	8	0	67
V	8	68	6	2	5	12	0	65
NM	23	3	58	0	13	3	0	31
VM	8	0	24	15	23	31	0	13
FW	19	14	5	0	56	5	2	43
IND	0	0	0	0	0	0	0	0
CON	27	0	0	0	18	9	46	11
NO.	76	55	32	3	37	21	6	

Group 6A

	N	V	NM	VM	FW	IND	CON	NO.
N	91	2	0	0	2	2	2	42
V	12	76	4	0	8	0	0	16
NM	6	0	67	0	22	6	0	12
VM	0	0	20	60	20	0	0	5
FW	3	5	8	0	80	0	5	39
IND	0	0	0	0	7	93	0	14
CON	27	0	0	0	55	0	19	11
NO.	46	22	17	3	46	15	5	

Group 8A

	N	V	NM	VM	FW	IND	CON	NO.
N	84	6	7	0	0	3	0	68
V	10	83	3	0	3	0	0	29
NM	16	9	50	0	25	0	0	32
VM	0	0	20	60	10	10	0	10
FW	2	2	4	2	90	0	0	52
IND	0	0	0	0	0	0	0	0
CON	66	0	0	0	0	0	33	3
NO.	68	32	26	7	57	3	1	

Group 10LA60

	N	V	NM	VM	FW	IND	CON	NO.
N	91	2	0	2	2	0	2	42
V	0	84	3	0	11	0	3	38
NM	50	20	20	0	10	0	0	10
VM	13	6	0	69	13	0	0	16
FW	3	0	3	3	73	0	16	37
IND	0	0	0	0	0	0	0	0
CON	13	13	0	0	13	0	63	8
NO.	47	37	4	13	36	0	13	

Table 4-19 (Cont'd)

Group 10LA61

	N	V	NM	VM	FW	IND	CON	NO.
N	87	1	4	0	6	1	1	73
V	8	81	0	5	3	3	0	37
NM	25	4	67	0	0	4	0	24
VM	0	0	50	0	50	0	0	4
FW	7	2	9	5	70	7	0	43
IND	0	0	0	0	0	0	0	0
CON	0	0	0	0	33	0	67	3
NO.	75	33	25	4	38	6	3	

Group 10HA60

	N	V	NM	VM	FW	IND	CON	NO.
N	83	3	5	0	5	3	3	40
V	0	87	0	0	14	0	0	37
NM	20	7	60	0	13	0	0	15
VM	0	0	0	100	0	0	0	8
FW	15	6	10	6	52	0	10	48
IND	0	0	0	0	0	0	0	0
CON	29	29	0	0	0	0	43	7
NO.	45	39	16	11	34	1	9	

Group 10HA61

	N	V	NM	VM	FW	IND	CON	NO.
N	85	0	5	0	8	2	2	67
V	20	69	3	6	3	0	0	35
NM	4	4	89	0	4	0	0	26
VM	0	0	33	0	67	0	0	3
FW	0	4	4	0	80	4	2	44
IND	0	0	0	0	0	0	0	0
CON	0	0	0	0	100	0	0	1
NO.	65	27	30	2	47	3	2	

Group 2H

	N	V	NM	VM	FW	IND	CON	NO.
N	70	7	17	0	3	0	3	30
V	3	92	3	0	0	3	0	39
NM	20	7	33	20	20	0	0	15
VM	11	0	0	44	22	22	0	9
FW	17	10	6	2	60	4	0	48
IND	0	0	0	0	0	0	0	0
CON	50	0	0	0	17	0	33	6
NO.	37	44	14	8	36	5	3	

Group 4H

	N	V	NM	VM	FW	IND	CON	NO.
N	84	5	2	2	5	0	2	56
V	7	84	3	0	6	0	0	31
NM	21	11	36	7	25	0	0	28
VM	33	33	0	33	0	0	0	3
FW	9	6	3	0	79	0	3	33
IND	7	0	0	0	0	93	0	15
CON	14	29	0	0	57	0	0	7
NO.	61	37	13	4	42	14	2	

Group 6H

	N	V	NM	VM	FW	IND	CON	NO.
N	91	5	0	2	3	0	0	65
V	0	83	0	3	7	3	0	30
NM	16	11	63	0	8	0	0	38
VM	6	12	6	65	12	0	0	17
FW	6	0	9	2	84	0	0	55
IND	0	0	0	0	0	0	0	0
CON	50	0	0	0	0	0	50	2
NO.	70	34	30	14	55	1	1	

Table 4-19 (Cont'd)

Group 8H60

	N	V	NM	VM	FW	IND	CON	NO.
N	82	2	5	0	5	2	5	44
V	0	86	0	0	5	5	5	21
NM	17	0	33	6	44	0	0	18
VM	0	0	9	91	0	0	0	11
FW	7	4	9	0	76	0	4	32
IND	0	0	0	0	0	0	0	0
CON	25	0	0	0	25	0	50	4
NO.	43	21	13	11	46	2	7	

Group 8H61

	N	V	NM	VM	FW	IND	CON	NO.
N	98	0	2	0	0	0	0	55
V	10	79	2	0	5	5	0	42
NM	15	0	85	0	0	0	0	26
VM	33	0	0	33	33	0	0	3
FW	3	3	3	3	83	5	3	40
IND	0	0	0	0	0	0	0	0
CON	0	20	0	0	60	0	20	5
NO.	64	35	25	2	39	4	2	

Group 10H60

	N	V	NM	VM	FW	IND	CON	NO.
N	88	0	0	0	3	0	9	33
V	0	96	0	0	4	0	0	23
NM	14	0	0	29	57	0	0	7
VM	0	14	0	57	29	0	0	7
FW	7	2	7	2	79	0	2	42
IND	0	0	0	0	0	0	0	0
CON	50	0	0	0	0	0	50	2
NO.	34	24	3	7	41	0	5	

Group 10H61

	N	V	NM	VM	FW	IND	CON	NO.
N	95	0	4	0	2	0	0	54
V	16	84	0	0	0	0	0	25
NM	6	0	90	0	5	0	0	19
VM	0	0	0	100	0	0	0	2
FW	0	0	0	0	100	0	0	27
IND	0	0	0	0	0	0	0	0
CON	0	0	0	0	100	0	0	2
NO.	56	21	19	2	31	0	0	



The figures for noun modifier and verb modifier matching substitutions are more varied, partly because of low frequency, particularly of verb modifier substitutions in some groups. Few groups had more than ten verb modifier substitutions. For groups with sufficient numbers of noun modifiers substitutions about 2/3 are usually replaced by other noun modifiers. Three groups reading story 61 (8H, 10HA, 10H) which has many complex noun modifiers produced 85, 89 and 90% matching function substitutions.

Verb modifiers are quite mobile in English surface structure. It is not surprising even with their relative small numbers that matching function substitutions for them are so variable.

Low groups increase the percent of function word for function word substitution from grade to grade: 2L - 46%, 6L - 56%, 8L - 68%, 10L59 - 88%. Average groups tend to increase in percent through eighth-grade but 4A is low with 56%. High groups increase successively: 2H - 60%, 4H - 79%, 6H - 84%, but 8H is at 76% on story 60 but at 83% on story 61, and 10H is down to 79% on story 60 but up to 100% on story 61.

Percents of all types of OR for ER substitutions are shown in Table 4-19.

If words other than nouns are substituted for nouns they are scattered among other functions with no strong patterns within or between groups.

No strong pattern exists for non-verb substitutions for verbs either. Low groups below grade ten show a fair number of noun for verb shifts (8 to 20%) but also substitute other functions.

Among low groups the most common non-matching function substituted for noun markers is the noun (17 to 38%).

Most average groups show a greater tendency to shift to function words for noun modifiers (2LA - 14%, 2HA - 16%, 6A - 22%, 8A - 25%). Since we classify possessive pronouns as noun modifiers, quite a common tendency to substitute noun markers for them would show in these figures (example: the/my). However, some groups are more varied in their noun modifier substitutions, producing moderate shifts to nouns and function words but shifts to other categories as well.

Numbers of verb modifier substitutions are insufficient to identify trends in non-verb modifier substitution.

Non-matching substitutions for function words are varied, scattering among other functions.

These figures demonstrate a relatively strong tendency even at the beginning to substitute words with like functions. Nouns and verbs are most likely to maintain functions in miscues. That

tendency increases but not to 100%. Function words are also likely to maintain functions as are noun modifiers when they occur as ER's for substitution miscues. Functions of OR's for verb modifiers are more variable.

#### Grammatical Function Omissions

Above we have looked at grammatical functions of substitutions. This data may be more meaningful if it is related to the percent of miscues of each function which are omissions. Table 4-20 presents this data.

The percent of omissions of noun miscues in low groups declines from grade to grade; 2L has 24.4% and 10L has 5.5%. The 8L group is an exception (18.6%). Because of our practice of counting only the first instance when the same word is repeatedly omitted, this decline shows less dramatically than it would if we counted all instances, especially since early material uses words so repetitiously.

Noun omissions among average groups vary from 0 - 14.6%. High groups range from 3.4% to 35.5%. Groups reading story 60 have considerably higher percents than the same groups on story 61.

	10LA	10HA	8H	10H
Story 60	12.8	14.6	22.4	19.5
Story 61	0	1.8	6.8	8.6

This suggests that the differences between the two stories is an important factor. In this case lower percents of noun miscues are omissions on the harder task, suggesting that the process is operating somewhat differently in the two tasks.

Percents of verb miscues that are omissions is variable. Only two groups, 2L at 18% and 4H at 21.1% exceed 12.5% (10LA60). Most groups are under 5%.

Noun modifier omission percent are quite high in 2L, 4L, and 6L (31%, 32%, 23% respectively). Most groups range between 10 and 20%. Exceptions are 8L (8.3%), 10L61 (3%), 2LA (5%), 10LA60 (0%), 10HA61 (4%), 6H (6.1%). Since noun modifier omissions are usually omissions of deep structure clauses the relatively high figures for the three low groups suggests an important effect on comprehension. Lower grade poor readers show a strong tendency to omit "unknown" words rather than guess or produce non-word substitutions. (See discussion of levels below.)

Verb modifier omission percents are variable among groups. Again, because the numbers of miscues involving verb modifiers is low, percents are not really interpretable; 10H61 shows 50%, for example, but that's only two miscues.

Table 4-20

## Percent of ER Grammatical Function Omissions

	N	V	NM	VM	FW
<b>Low</b>					
2L	24.4	18.0	31.3	0.0	18.0
4L	19.1	8.3	32.3	15.6	21.1
6L	12.5	3.2	23.9	18.2	10.3
8L	18.6	3.9	8.3	0.0	24.0
10L59	5.5	2.4	18.6	10.0*	25.0
10L61	3.9	0.0	3.0	0.0	42.9
<b>Average</b>					
2LA	10.7	7.3	5.	0.0	15.4
2HA	2.9	4.3	13.9	14.3*	10.0
4A	12.7	1.3	12.8	7.1	7.3
6A	7.8	10.8	16.7	22.2*	36.4
8A	5.9	6.2	9.4	14.3	34.2
10LA60	12.8	12.5	0.0	15.8	39.1
10LA61	0.0	2.8	16.7	0.0	29.3
10HA60	14.6	5.1	21.1	26.7	35.1
10HA61	1.8	0.0	4.0	0.0	26.3
<b>High</b>					
2H	35.5	5.1	13.3	30.0	37.5
4H	14.5	21.1	11.5	25.0*	52.4
6H	3.4*	7.1*	6.1*	11.1	25.4
8H60	22.4	0.0	15.8	40.0	41.3
8H61	6.8	2.6	16.7	25.0*	40.0
10H60	19.5	4.3*	11.1*	25.0	45.7
10H61	8.6	4.2*	9.5	50.0*	41.0

\*Starred entries refer to percents of low frequencies (under 10) and therefore are not interpretable.

Function word omission percents are higher among low readers in higher grades and among high readers in general. Among high groups percents are between 37.5% (2H) and 52.4% (4H) except 6H which shows 25.4%.

Second and fourth-grade average groups have relatively low percents (7.3 - 15.4%) but all other average groups fall between 26.3 and 39.1%. Omissions of function words generally involve minor shifts in meaning and/or grammar. They are a sign, apparently, of increasing reading proficiency at least until the average sixth-grade level is reached. Again here is evidence of high second-graders exhibiting behavior more like high readers at other grades than like other second-graders.

#### Grammatical Functions

Every word in every story is assigned a grammatical function according to a grammar which is detailed in Appendix D. This enables us to compare occurrence of miscues in particular types of words with the frequency of those types in the stories. It also enables us to compare the function of ER and OR.

The grammar we use looks at three levels of analysis: Category, Filler, and Function.

Table 4-21 shows the percent of miscues which involve each grammatical category.

These percents demonstrate two factors which influence the grammar of each story. One reason why category percents vary is the increased complexity of more advanced stories. But idiosyncracies of the story content and writer's style may also influence distribution of categories.

Nouns are a somewhat smaller percent of the advanced stories 60 and 61, while function words are higher percents of more difficult stories. These figures reflect the increasing complexity of the grammar. Similarly verbs make up a larger proportion of stories 22, 24, and 28 than of the more advanced stories.

On the other hand, story 60 uses a smaller percent of noun modifiers than story 61 (9% as compared to 12%) and both vary from stories 44 through 59 which use about 10.5% noun modifiers. These figures probably represent the style and content of the stories. The essay, story 61, uses many noun modifiers to embed subtle extras. Story 26 shows 14.5% noun modifiers and relatively fewer verbs. This reflects either the author's style or a conscious decision on the part of the editor of this first-grade story to emphasize noun modifiers. Since story 28 has 5.8% noun modifiers and comes from the same sequence, this deliberate decision is not a likely explanation.

In general, nouns and function words make up about a third each of these texts. About 1/6 of the text words are verbs. Ten

Table 4-21

Percent of Grammatical Categories

Category	Story Number										
	22	24	26	28	44	47	51	53	59	60	61
Nouns	30.0	36.2	30.1	36.3	34.5	33.4	30.8	29.5	29.5	27.9	27.5
Verbs	23.0	25.7	18.0	22.3	16.6	16.5	17.6	18.3	15.4	18.4	17.5
Noun Modifier	12.0	8.5	14.5	5.8	10.5	10.8	10.2	10.7	10.2	8.8	11.6
Verb Modifier	5.1	1.0	6.0	3.1	2.6	4.4	4.6	4.0	4.1	5.8	3.1
Function	27.1	26.5	26.3	30.1	31.7	32.9	32.7	31.2	38.7	36.4	38.9
Indeterminate	2.4	1.0	3.4	2.0	1.4	.3	0.0	2.0	.1	.3	0.0
Contractions	0.0	0.0	0.0	0.0	.2	.6	2.3	2.2	.6	2.2	.6
Totals	99.6	98.9	98.3	99.6	98.2	98.9	98.2	98.0	99.0	99.8	98.9

percent are noun modifiers and about 4% are verb modifiers.

Contractions do not appear until story 44 and never exceed 2.3%. Words with indeterminate function occur in primer stories and are an aspect of the weak syntax. In later stories, they generally consist of words out of context, for example, the list of "S" words which the main character reads from a dictionary in story 53.

Table 4-22 provides data on the grammatical category of ER's for miscues produced by each group. Only miscues or submiscues which involve the word level are included here. A comparison of the occurrence of grammatical categories among miscues with their distribution in the stories provides some insights into how syntax is involved in miscues. A reasonable prediction would be that miscues should be proportionate to the percent of each category in the text.

The 2L group's miscues show no strong differences in grammatical categories of the ER's and their distribution in stories 22 and 24 (which were treated as a single task). Percents of noun and verb modifiers among miscues are somewhat lower than the text percents.

Group 4L's reading of stories 26 and 28 involves a higher percent of miscues with verb modifiers than proportionate and fewer miscues involving function words than might be expected.

Higher than predicted percents of miscues occur in the 2LA groups' reading of story 44 for nouns and noun modifiers. Function words show a smaller percent than expected.

Story 47 was read by both 2HA and 6L. Both groups have higher than expected percents of miscues for verbs and noun modifiers. The 6L group has the higher percent of verb miscues (25%). Function word miscues are lower than predicted for both groups, but 6L has the lower percent (16%) of the two. Group 6L has a percent of miscues on nouns that is somewhat above the expected level and higher than 2HA.

Groups 2H and 4A read story 51. Both groups have higher than expected rates of miscues on verbs though 4A is appreciably higher (28%). The 4A group has only 20% miscues involving function words compared to 36% for 2H and 33% for the text. Both groups show disproportionately high rates of miscues on contractions. Noun modifiers are involved in more 4A miscues than expected. Noun miscues are less than expected for 2H. Verb modifier miscues are higher than predicted for 2H.

Among the three groups reading story 53, (4H, 6A, 8L) miscues on contractions continue to be disproportionately high. This story has a number of words with indeterminate functions because they are out of context (2%); The main character reads a list of words from a dictionary. They account for 5 to 6% of the miscues for each

Table 4-22

Grammatical Category of ER by Groups

Group	Story	N	V	NH	VH	Func.	Ind.	Cont.
2L	22/24	38.1	26.2	7.0	2.9	24.2	1.2	-
4L	26/28	33.7	24.9	8.5	9.3	21.5	2.1	-
2LA	44	41.8	18.2	15.9	2.0	20.7	-	1.4
2HA	47	33.6	21.0	15.9	4.1	24.0	.7	.7
6L	47	37.8	25.3	15.9	4.2	16.0	-	.9
2H	51	24.2	19.6	9.6	7.1	36.3	-	3.3
4A	51	29.5	27.7	13.5	5.3	19.8	-	4.1
4H	53	27.8	16.8	12.7	2.7	29.9	6.2	3.8
6A	53	23.3	17.6	12.8	5.7	26.7	5.4	8.4
8L	53	27.0	21.9	16.5	3.4	19.5	5.3	6.0
6H	59	29.5	18.5	15.5	7.3	28.7	-	.4
8A	59	32.6	17.4	15.7	5.3	27.3	-	1.8
10L	59	35.8	25.4	17.0	4.4	15.5	-	1.8
8H	60	28.1	12.1	7.3	10.7	39.0	-	2.8
10LA	60	25.2	20.2	7.8	9.4	33.3	-	4.1
10HA	60	24.0	20.2	7.5	8.3	36.5	-	3.6
10H	60	24.6	15.4	6.7	8.7	42.1	.5	2.1
8H	61	28.2	21.2	16.1	2.7	29.4	-	2.4
10L	61	41.3	20.8	19.6	2.8	14.8	-	.8
10LA	61	34.8	18.2	15.9	2.4	27.7	-	1.0
10HA	61	34.4	17.4	15.4	1.5	30.9	-	.4
10H	61	36.5	16.9	12.9	2.8	27.5	-	3.4



of the groups. All three groups have higher than predicted rates of miscues for noun modifiers, though the rate for PL is notably higher (17%). All groups are below proportionate level for function words but 8L is much lower with only 20%. 8L has a higher than expected rate of verb miscues (22%). 6A is low on noun miscues (23%).

All three groups reading story 59 show higher percents of noun modifiers (about 16%) in their miscues than the text shows (10%). Though this story has 39% of function words, all groups show considerably lower percents in their miscues, and 10L drops to 16%. Noun and verb percents are higher than expected for 10L. Verb modifiers are somewhat higher for 6H.

Comparisons between the percents on story 59 and 61 reveal that there were higher percents of miscues on nouns and noun modifiers for story 61 and a higher percent of verbs and verb modifiers on story 59. Group 10L shows 43% noun miscues on 61, though the text has only 28% nouns.

All groups reading 60 and 61 have higher percents of noun miscues on 61 than 60 except 8H. The noun percents are higher than proportionate on 61 and lower on 60. Group 8H, the exception, is near the expected level (28%) on both.

Percents for noun modifiers for all groups on story 61 are about double their percents on story 60. Story 61 has 12% noun modifiers as compared to 9% for story 60. All groups are above 12% on story 61 and below 9% on story 60.

An opposite pattern is shown for function words. Percents are lower for all groups on 61 and higher on 60. All percents are at or below expectation except 10H (42%) on story 60.

All groups show rates of miscues on verb modifiers on 60 which are between 8 and 11%. Rates on 61 are 1.5 to 2.8%. Story 60 has 6% verb modifiers, 61 has 3.1%.

No pattern of variance shows for verb miscues in this comparison except for 8H. It has 12% for 60 and 21% for 61.

These comparisons of groups reading the same stories suggest the following conclusions:

If a story is relatively difficult it will produce higher than expected rates of miscues in nouns and to a lesser extent verbs and noun modifiers. Nouns are the most open-ended and varied of all categories so these results are not surprising. Noun modifiers in all readings tend to be found to a higher than expected degree among miscues. Verb modifiers form a higher percent of miscues when the task is not so difficult for the readers. When the task is difficult the percent of function word miscues tends to be low, while for easier tasks rate of function word miscues is at or



near the expected percent. Low groups in general produce low percents of function word miscues.

Table 4-23 shows the percent of grammatical fillers in each story. Again these figures show both stylistic and complexity differences. Note for example that story 24 has 15% proper nouns, far more than any other story. Here's a sample of the text: "And little Freddie did help Mother and Father and Jack". Stories 53 and 60 have unusually high percents of pronouns. These are first-person narrative stories with very few characters. In story 60 with only three male characters, 3.1% of all running words are he. It occurs 137 times. Since it is a first-person story I occurs 123 times and 2.8% of all words. These examples illustrate how the patterns of fillers are a function of style and content.

Note also, however, that many of the less common fillers in all categories do not occur at all in the earlier stories because they are more likely to be found only in more varied syntax.

Among nouns, only common nouns, proper nouns, and pronouns make up more than 1% of all words in most stories. One exception is the phrasal unit, a phrase which has been used as a name, in stories 26 through 47. This may be an editor's device since they all come from the same basal series. Here are some examples: Green Hills, Kitten Jones, Maker of Beautiful Songs.

In all stories most verbs are transitive. Be forms (copula) are stable at just under 2% except in the four early stories. Infinitives, treated in our systems as main verbs in clauses, vary between 1% and 2% except in the four beginning stories and the adult essay (61). Pro-verbs, verb markers which replace the whole verb phrase, are not common but occur in two early stories, probably as an accident of controlled vocabulary.

The traditional adjective is the most common noun modifier in all stories. In stories 44 through 61 it is roughly 4% of all words. Possessive pronouns are next in frequency for most stories. These have double functions in embedded positions since they replace noun markers while being embedded:

a book of mine      my book

In our system we count them only as noun modifiers and not as noun markers.

In story 26, titles (Mr., Dr., Captain, etc.) are 4% of the running words. In some other stories (28, 44, 51, 53) titles account for 1% to 2% of all words. This is clearly a matter of the stories' cast of characters.

Noun adjuncts occur in all stories above 24 but never reach 2% of the running words. No other filler reaches 1% for any group.

Table 4-23

Percent of Grammatical Fillers in Each Story

	Story Number										
	22	24	26	28	44	47	51	53	59	60	61
<b>Noun</b>											
Common	14.8	4.0	13.0	15.4	15.6	17.5	14.2	14.4	20.5	13.2	15.7
Proper	5.0	15.1	4.2	3.5	6.7	5.3	6.5	2.3	1.6	1.9	2.3
Pronoun	10.1	17.1	9.9	12.9	9.6	8.2	9.3	11.6	6.7	11.8	6.9
Verb Derived	-	-	-	-	.1	.4	.1	.2	.3	.4	.6
Phrasal Units	-	-	3.0	4.2	1.8	1.4	.1	.2	.2	-	.9
Word Name	-	-	-	-	-	-	-	-	.1	-	-
Quantifier	-	-	-	.3	.8	.6	.5	.6	.4	.4	.8
Adjective as Noun	-	-	-	-	-	-	.1	.2	.1	.4	.2
<b>Verbs</b>											
Be forms	3.2	5.5	1.9	3.1	1.8	2.0	1.7	1.7	1.7	1.9	1.6
Transitive	15.8	14.7	10.0	14.7	11.2	8.9	10.5	10.2	6.4	9.6	8.6
Intransitive	3.6	2.0	6.1	3.1	2.0	4.4	3.4	4.6	6.3	4.9	2.5
Infinitive	.4	3.0	-	.7	1.6	1.1	1.9	1.6	1.3	1.8	2.5
Pro-verbs	-	.5	-	.7	-	.1	.1	.2	.2	.1	.1
<b>Noun Modifier</b>											
Adjective	7.0	8.5	6.9	2.4	3.8	5.1	3.6	4.0	4.1	4.4	4.5
Noun Adjunct	-	-	.7	1.7	1.4	1.2	1.1	1.2	.6	.5	1.8
Verb Derived	-	-	-	-	.1	.5	.1	.4	1.1	.4	.7
Possessive Noun	-	-	-	-	.2	.3	.8	.3	.2	.5	.1
Possessive Pronoun	5.0	-	2.7	-	2.2	3.4	2.2	2.9	3.5	2.6	2.8
Titles	-	-	4.2	1.7	2.0	.2	1.8	1.4	-	.1	.1
Adverbial	-	-	-	-	.1	-	.4	.3	.2	.2	.4
Ordinal	-	-	-	-	.7	.1	.2	.1	.4	.1	.2
Phrasal Unit	-	-	-	-	-	-	-	.1	.1	.2	.8
<b>Verb Modifier</b>											
Pro-adverb	-	-	2.7	-	.4	.3	.4	.6	.7	1.0	.1
Adverb	.9	1.0	2.2	2.1	1.8	3.3	4.0	3.1	3.1	4.0	2.9
Noun as Adverb	4.2	-	1.1	1.0	.4	.9	.2	.3	.3	.8	.1

Most verb modifiers are traditional adverbs. Stories 22 through 28 show more varied patterns suggesting their more artificial syntax. In story 22, in fact, most adverbs are nouns in adverb positions. The word here occurs nine times in this brief story. Story 26 has several pro-adverbs (prepositions which stand for the whole phrase). Examples: Something came down. And she went. Mrs. Duck looked up.

The occurrence of types of function words is shown in Table 4-24. These are good indicators of the increased syntactic complexity of the more advanced stories.

Stories 22 through 44 have little or no clause markers whereas story 61 has 4.7%. Phrase markers are over 7% in stories 44 and above reaching near 12% in 59. Conjunctions make up 3.5 to 5% of the four most advanced stories. Together with clause markers, they indicate the joining of units to form larger more complex units in these advanced stories.

Quantifiers hit a level at story 44 and above of about 1.5%. Negatives drop from about 2.5% in stories 22 and 24 to about .7% in the following stories. Intensifiers are about 1.5% above story 47. In story 24 the single expression too little, a kind of story theme, occurs over and over. Too accounts totally for the 4.5% shown in Table 4-24 for story 24.

Verb particles are 2% and 4% of words in stories 28 and above, somewhat lower than the percent of verb markers which is 3% to 4% except in stories 22, 24, 28, and 61.

Noun markers are variable, but they are 7% or better except in story 24 which has few common nouns, and thus few noun markers.

Table 4-25 shows the third level of grammatical analysis: functions.

A decreasing percent of nouns in the stories function as clause subjects. This drops from about 20% on stories 22, 24, 26, and 28 to about 10% on stories 59, 60, and 61. This shift is accompanied by increasing general diversity in noun functions and a generally higher percent of objects of prepositions. Both are signs of increased syntactic complexity.

The percent of nouns which are noun-objects of prepositions is 7 to 12% in stories 44 and above.

Direct objects are between 5.6 and 8.8% with higher stories tending to have the lower figure.

Terms of address do not occur in some stories. In story 24, they reach 3% as a result of syntax such as: "Oh, Freddie! Come and help me!" and "I can help you, Jack." he said."

Table 4-24

Percent of Function Word Categories in Each Story

Story	22	24	26	28	44	47	51	53	59	60	61
<b>Functions</b>											
Noun Marker	8.8	.5	8.4	12.7	9.8	10.1	8.7	7.7	12.3	8.2	7.3
Verb Marker	7.0	6.0	3.4	4.6	3.4	3.3	3.5	3.2	2.7	3.4	6.2
Verb Particle	1.3	4.5	.7	2.8	3.3	2.0	3.1	2.8	2.3	3.8	2.8
Question Marker	.4	-	1.1	.7	.7	.1	.3	.2	.1	.3	-
Clause Marker	-	-	.7	1.4	.9	3.3	3.3	2.1	2.5	2.3	4.7
Phrase Marker	2.7	3.0	6.5	3.5	8.3	8.5	7.8	7.2	11.6	8.9	10.0
Intensifier	-	4.5	-	.3	1.1	.9	1.7	1.6	.6	1.5	1.2
Conjunction	2.3	3.0	3.8	1.7	2.6	2.4	2.0	3.5	3.8	5.0	3.5
Negative	2.3	2.5	1.1	.7	.7	.3	.7	.4	.7	.9	.7
Quantifier	-	-	.3	.7	1.4	1.5	1.1	1.3	1.6	1.2	1.5
Other	2.3	2.5	.3	1.0	.5	.5	.4	1.2	.5	.7	.7
<b>Total</b>	<b>27.1</b>	<b>26.5</b>	<b>26.3</b>	<b>30.1</b>	<b>31.7</b>	<b>32.9</b>	<b>32.7</b>	<b>31.2</b>	<b>38.7</b>	<b>36.4</b>	<b>38.9</b>

Table 4-25

Percent of Grammatical Functions in Each Story

	Story Number										
	22	24	26	28	44	47	51	53	59	60	61
<b>Noun</b>											
Subject	19.5	21.2	16.8	20.7	15.0	14.3	13.2	13.7	10.2	11.2	9.0
Direct Object	7.4	8.5	6.8	8.8	7.3	5.6	6.9	5.8	5.7	6.7	7.3
Indirect Object	-	-	-	1.0	.3	.1	.3	.2	.1	.5	.1
Appositive	-	-	-	.3	.7	.4	.1	.1	.1	.2	.7
Term of Address	.9	3.0	-	-	.4	.4	1.1	.6	.6	.4	-
Object of Preposition	2.2	3.0	6.5	3.8	9.0	10.8	8.1	7.2	11.6	8.3	9.2
Subject Complement	-	.5	-	1.0	1.4	.6	.7	1.0	.5	.4	1.0
Object Complement	-	-	-	-	-	.3	-	-	-	-	.1
Noun in Intensification	-	-	-	-	-	-	-	.2	.2	.3	-
<b>Verb</b>											
Active	19.9	24.2	18.0	20.0	16.0	15.3	16.7	16.8	14.7	16.7	14.5
Passive	-	-	-	.3	.2	.8	.5	.5	.7	.5	.7
Imperative	3.7	.9	-	2.0	.1	.2	.2	.3	.1	.8	-
<b>Noun Modifier</b>											
Subject Complement	-	5.0	-	-	.8	.8	1.9	1.4	1.0	1.6	.6
Embedded	12.0	3.5	14.5	5.8	9.5	8.8	8.0	7.6	9.0	6.3	10.3
Object Complement	-	-	-	-	-	.2	.1	.1	.1	.9	.5
<b>Verb Modifier</b>											
Place	4.2	-	4.1	.7	.8	1.0	.4	.8	.8	1.7	.2
Manner	-	-	-	-	.7	1.0	1.4	1.3	1.8	2.1	.9
Time	-	1.0	1.9	2.4	.9	1.8	2.1	1.2	1.3	1.7	1.2
Other	.9	-	-	-	.2	.6	.7	.6	.2	.3	.7

Active verbs are 18 to 24% of stories 22 through 28 but drop to 14.5 to 17% of stories 44 and above. Passive verbs do not occur until story 28, and are .5 to .8% from story 47 on.

Imperatives occur in all stories except 26 and 61, but only in stories 22 and 28 is there an appreciable percent. Examples from story 22 are the following:

"Find the toys!"      "Come and look in here"  
"Look down here"      "Look for the red train".

Most noun modifiers are in embedded positions. Only story 24 among the beginning four stories has any other. In that story, 5% of the words are noun-modifying subject complements: "I am too little."

Verb modifiers in stories above 28 are relatively evenly divided among place, manner, and time. Verb modifiers of manner don't occur in stories 22 through 28.

#### Intonation

Every utterance has a pattern of varying stress, pitch, and juncture (pause). When an oral reader predicts an underlying sentence structure he assigns an intonation pattern automatically as a last step in producing an oral surface representation. The intonation is an important cue to the structure the reader has in mind. In miscue analysis the reader's intonation helps us to make a number of decisions about the reader's intent, for example, whether a non-word is grammatically acceptable. Lack of any acceptable intonation is an important cue that the reader may have lost the deep structure.

Sometimes intonation changes are integral to the miscue itself as when the verb record shifts to the noun record. In such cases the intonation category is scored. But, in all other cases, where intonation is only incidental, the category is not marked.

Changes between expected and observed responses in regard to intonation can be classified as variations within and between words, those relating to phrase, clause and sentence differences, and those involving terminal substitutions and direct quotations.

When the expected response The desert is very hot is read as if desert is a verb, the intonation change occurs within the word. Table 4-26 (intonation involvement) indicates minimal involvement only of miscues in this category. When they do occur, they appear mostly among low and average eighth and tenth grade readers.

Intonation shifts can occur between words within one phrase structure. The intonation change in ...came from jungle rivers... to came from Jungle River... causes jungle to become part of a proper

Table 4-26

## Intonation by Group

Grade	No	Within Words	Between Words Within one Phrase Structure	Relative to Phrase or Clause Structure	End of Phrase or Sentence	Conjunction for Terminal or Vicos Versas	Intonation Involving Direct Quotes
Low	88.0	-	-	.9	5.1	-	6.0
2	92.9	-	.3	.6	4.2	.2	1.8
4	97.8	-	.2	.2	1.8	-	-
6	94.7	.5	-	.3	2.3	.3	1.9
8	96.9	.3	.5	1.2	1.2	-	-
10L59	96.5	1.6	.2	.4	1.0	.2	-
10L61	94.5	.4	.2	.6	2.6	.1	1.6
Mean							
Average	93.0	-	.8	.3	3.7	.3	2.0
2LA	95.3	.4	-	.4	2.5	.4	1.1
2HA	96.0	-	.3	.5	2.7	.3	.3
4	94.0	.3	1.7	-	2.7	.7	.7
6	95.0	1.4	.3	.5	1.9	.9	-
8	93.8	.7	-	.4	1.8	1.6	1.6
10LA60	93.4	1.4	1.7	.3	3.0	-	-
10LA61	93.8	.5	-	1.8	.4	1.0	2.1
10HA60	93.8	1.2	1.2	2.7	1.2	-	-
10HA61	94.6	.6	.6	.7	2.2	.5	.8
Mean							
High	90.1	-	.4	2.4	5.2	-	2.0
2	94.9	-	1.4	1.0	.7	-	2.1
4	87.9	1.7	1.0	3.3	5.2	.8	-
6	95.8	-	-	.5	1.4	1.6	.7
8H60	97.0	-	1.5	.7	.4	.4	-
8H61	93.3	-	.4	.4	2.8	2.0	1.2
10H60	96.4	-	1.0	1.6	.5	.5	-
10H61	93.6	.2	.8	1.4	2.3	.7	.8
Mean							

name rather than an noun modifier. A similar intonation shift occurs when plants that grow under water, snails, and is read as plants that grow under water snails and. Instances of intonation changes between words within the phrase structure are again minimal. Such miscues may result from certain types of grammatical complexity. All groups except 10L that read story 61 had 1 to 1.7% of these miscues as compared with almost none on story 60.

The reading of Tomorrow we must crown a Miss America who has buck teeth, cash in Las Vegas, abandon our calling cards and list everyone in Who's Who such that cash becomes a noun rather than a verb, exemplifies a shift in intonation that crosses phrase boundaries. As used in the text, the expression cash in means "turn in for money." Similar intonation changes crossing phrase or clause boundaries are involved in relatively small numbers of miscues for these groups. High groups in grades two, four and six and high average tenth graders show higher than average rates of these miscues.

Insights into the reader's ability to get to the deep structure of the expected response are observable in intonation miscues that relate to phrase or sentence endings. The reader who substitutes It was fun to go to school when he wasn't in school. He skated with his friends., for the text form It was fun to go to school. When he wasn't in school he skated with his friends., reveals through the change in intonation, his shift to a different deep structure and meaning than that of the expected response. This type of intonation miscue is the most frequent for most groups. It is particularly common, reaching up to 5%, among all second grade groups, 4L and 4A, and 6A and 6H. We see the reader's syntactic prediction through his intonation.

Intonation is also involved when the reader substitutes a conjunction for a terminal punctuation or the reverse. This occurs when, The boys fished and then they cooked their catch. is read for The boys fished. Then they cooked their catch. Miscues involving intonation of this type are small in number, the highest figure being 2% for 10H readers on story 60. Groups reading story 60 show 1 to 2% while they show 0 to 5% on story 61.

Intonation changes involving direct quotes are observable in shifts from an expected response such as: "Tom," said mother., to the observed response: Tom said, "Mother."

The 2L group shows 6% of these miscues indicating a particular problem in the material at the level they are reading. No other group exceeds 2.1% (10HA60, 4H). Obviously in stories with much dialogue these miscues are more likely than in selections with little. That explains why all groups that read both story 60 and 61 show no such miscues on story 61 but .7 to 2.1% on story 60.

Some of these figures on intonation illustrate a miscue phenomenon. In order for miscues to occur, the text must provide



opportunities for miscues to involve quotes. Similar statements can be made about many other kinds of miscues. The characteristics of the texts read must be considered in evaluating the miscue data.

### Semantic Acceptability

The taxonomy category semantic acceptability deals with the meaning of the observed response. As with syntactic acceptability, the acceptability of the miscue must be considered within the entire sentence. Since multiple miscues may occur, the reader has the option of correcting them or altering later material in order to accommodate them. Also as in the syntactic acceptability category, five coding possibilities exist: a reader's miscue may be fully acceptable within the text, acceptable only within the sentence itself, acceptable only with prior portions or with following portions of text, or totally unacceptable. But unlike the grammatical acceptability category, the possibilities are relatively great that a miscue may be acceptable within the sentence but not within the entirety of the passage. Such possibilities are limited within the syntactic acceptability category to minor inconsistencies in person, tense, and number.

It has already been stated that semantic acceptability is partially dependent upon syntactic acceptability: without a grammatical structure which is acceptable within the dialect of the reader, we cannot be sure that the meaning of any sentence has been reached. Semantic acceptability scores, then, are never higher and are generally lower than syntactic acceptability scores. The relationship of these two, of grammar to meaning, will be discussed later.

Table 4-27 clearly demonstrates that percent of semantic acceptability is related to the reader's proficiency. The percents of miscues which are semantically unacceptable decrease as proficiency increases. This is true through all the grades in our study, from the second graders who range from 36.2% (2L) to 20.2% (2H) on through the tenth graders who particularly illustrate this point, ranging from 40.9% unacceptability (10L59) to 7.5% (10H60). The tenth graders' range of semantic unacceptability is equally striking in their reading of story 6L, despite the fact that all readers make more unacceptable miscues: 6L.1% (10L68) to 22.3% (10H61). The average readers in each grade level fall between these extremes, with the single exception of the 6A group. The 6A readers perform very much as do the readers one rank above them in almost all aspects of the research, probably because their reading task was not sufficiently demanding (6L - 40.6% unacceptability, 6A - 12.9%, 6H - 24.1%).

Percents of miscues which are fully semantically acceptable within the total context of the story also indicate this category's relationship to rank. Again, the sixth graders appear exceptional, because the 6A group shows more fully acceptable miscues (56.4%) than the 6H (33.2%). The 6L group, however, makes only 1% fully semantically acceptable miscues.

Table 4-27

## Semantic Acceptability by Grade

Grade	Unacceptable	Acceptable with Prior Portions of Text	Acceptable within Following Portions	Acceptable within Sentence only	Fully Acceptable within Passage
2L	36.2	21.3	8.1	11.9	22.6
2LA	29.9	20.8	3.7	9.6	36.1
2HA	25.7	26.8	12.0	8.3	27.2
2H	20.2	23.8	7.8	16.7	31.7
4L	38.6	24.7	6.2	10.1	20.4
4A	32.4	27.3	6.4	8.2	20.7
4H	18.8	20.9	5.8	11.3	43.2
6L	40.6	27.6	9.0	7.8	15.0
6A	12.9	20.1	4.0	6.6	56.4
6H	24.1	23.4	9.5	9.8	33.2
8L	34.3	21.6	8.2	9.5	26.4
8A	21.0	21.1	7.4	8.4	42.1
8H60	15.0	13.8	4.9	8.0	58.3
8H61	29.6	15.4	7.9	9.0	38.2
10L59	40.9	19.1	12.1	6.8	21.1
10LA60	15.6	24.7	4.4	8.3	47.0
10HA60	14.1	17.5	3.1	11.8	53.5
10H60	7.5	9.5	2.4	7.9	72.7
10L61	61.1	14.1	13.5	3.3	8.0
10LA61	41.2	23.2	6.6	8.7	20.4
10HA61	32.4	23.6	7.3	8.5	28.2
10H61	22.3	19.2	4.7	7.3	46.6

Fourth, eighth, and tenth graders (performing on both tasks) demonstrate a progression toward greater acceptability as proficiency increases. The pattern within second grade groups is not as clear cut: though the 2L group shows only 22.6% semantically acceptable miscues, the 2HA group 27.2%, and the 2H 31.7%, this progression is interrupted by the 2LA group which achieves a score exceeding the 2H (36.1%).

Percentages of miscues which are only partially acceptable (either with prior or with following portions of the text), and percentages of miscues which are acceptable within the sentence

only, do not seem to bear any identifiable relationship to the proficiency of the reader. Miscues acceptable with prior portions of text occur considerably more frequently than miscues acceptable with following portions: all groups have higher percentages of the first type than of the second. The 6L and the 4A groups show the highest percentages of miscues semantically acceptable with prior only: 27.6% and 27.3% respectively. The lowest percentage of any group is 9.5% (10H60). This clearly illustrates that predicting is an integral part of the psycholinguistic reading process.

Percents of miscues acceptable with following portions of the reading material are low, ranging from 3.1% (10HA60) to 13.5% (10L61). Though it is true that no clear relationship to reader proficiency may be found in these percentages, it is interesting that the 10L group is unusual among the tenth graders performing on both tasks. The 10LA, 10HA, and 10H groups have similarly low percents, whereas the 10L group shows two relatively high scores: 12.1% (story 59) and 13.5% (story 61). This may be attributed to the tendency of this low proficiency group to lose the threads of both syntax and meaning and get lost in the midst of lengthy units of structure, starting afresh in the middle of a sentence.

Percents of miscues acceptable within the sentence but not in the total passage seem to bear no correspondence to proficiency either, but rather are fairly uniform across ranks. The highest percentage of such miscues is 16.7% (2H), though the second highest percentage is 11.9% (2L). The lowest percentage is 3.3% for (10L61).

Though degree of semantic acceptability is clearly and importantly linked to the reader's proficiency, it is also related to grade level. Table 4-28 reorganizes the data in table 4-27 to support this relationship which is most marked among readers of high proficiency. Temporarily disregarding the more difficult magazine article, story 61, we can observe a movement from greater to lesser percents of unacceptability from 2H (20.2%) to 10H60 (7.5%). There is a gradual development through each grade, although again the sixth grade breaks the progression. Readers are making fewer semantically unacceptable miscues in successively higher grades.

Among high readers this same relationship to grade level is noticeable in all other degrees of semantic acceptability: partial acceptability, acceptability within the sentence, and full semantic acceptability within the passage. The sixth grade continues to interrupt the pattern somewhat, though not in percent of miscues acceptable within the sentence only. The two measures particularly indicative of this development with age are: 1) acceptable with prior and 2) fully acceptable. These are larger percentages and the progression from grade to grade is more clearly visible. The 2L group's 13.8% miscues acceptable with prior compares with 9.7% of the 10H60 group. The 2L group's 31.7% miscues fully acceptable

compares with the 72.7% of the 10H60 group. The fourth and eighth-graders fall directly between these figures, maintaining the progression toward greater semantic acceptability. The sixth graders fall between the second and fourth-grade groups, rather than between fourth and eighth.

Table 4-28

Semantic Acceptability by Rank

Grade	Unacceptable	Acceptable with Prior Portions of Text	Acceptable within Following Portions	Acceptable within Sentence only	Fully Acceptable within Passage
2L	36.2	21.3	8.1	11.9	22.6
4L	38.6	24.7	6.2	10.1	20.4
6L	40.6	27.6	9.0	7.8	15.0
8L	34.3	21.6	8.2	9.5	26.4
10L59	40.9	19.1	21.1	6.8	21.1
10L61	61.1	14.1	13.5	3.3	8.0
2LA	29.9	20.8	3.7	9.6	36.1
2HA	25.7	26.8	12.0	8.3	27.2
4A	32.4	27.3	6.4	8.2	25.7
6A	12.9	20.1	4.0	6.6	56.4
8A	21.0	21.1	7.4	8.4	42.1
10LA60	15.6	24.7	4.4	8.3	47.0
10HA60	14.1	17.5	3.1	11.8	53.5
10LA61	41.2	23.2	6.6	8.7	20.4
10HA60	32.4	23.6	7.3	8.5	28.2
2H	20.2	23.8	7.8	16.7	31.7
4H	18.8	20.9	5.8	11.3	43.2
6H	24.1	23.4	9.5	9.8	33.2
8H60	15.0	13.8	4.9	8.0	58.3
10H60	7.5	9.7	2.4	7.9	72.7
8H61	29.6	15.4	7.9	9.0	38.2
10H61	22.3	19.2	4.7	7.3	46.6

Although the high groups best demonstrate the effect of grade level upon semantic acceptability, average groups also support this trend. Again suspending mention of story 61 until later, we can see a move from 29.9% semantic unacceptability (2LA) to 14.1% (10HA60). This time both 4A and 6A disrupt the pattern somewhat, but the progression remains. Among percents of miscues fully semantically acceptable, the 6A group again demonstrates that their reading material was not as challenging; however the 10HA60 group shows a high ability to cope with semantic cues in their second highest score of 53.5%.

It is extremely interesting that this development of a concern for meaning and an ability to deal with semantic input from the second grade through the tenth is descriptive only of high and average readers. This maturation through the grades is not at all apparent among less efficient low readers who remain, in fact, rather uniform in their ability or lack thereof to produce semantically acceptable miscues. Continuing to hold story 61 for a later comparison, we can see that the range of unacceptable miscues is quite narrow (as opposed to average and high groups), and that the percents are considerably above those of either average or high readers: the scores range from 34.3% semantic unacceptability (8L) to 40.9% (10L59). The same uniformity is visible in percents of miscues fully acceptable: they range from 1% (6L) to 22.6% (2L). In other words, low readers in the older grade levels do not cope with the semantic information in their reading materials any more effectively than low readers in the youngest grades do. Though they normally continue to read increasingly difficult material, low readers do not develop any more efficient ways of dealing with the semantic content of these increasingly complicated texts. On the other hand, high readers and, to a lesser extent, average readers, do in fact manage to develop their strength in dealing with meaning: there are measurable degrees of improvement as the high or average reader becomes older. It is evident, then, that semantic acceptability is a strong indication of relative proficiency among readers.

Just as the material being read influences other aspects of the reading process (such as dialect involvement, and syntactic acceptability for example), so the text also influences semantic acceptability as well. This is particularly demonstrated by a comparison of those groups who read story 61 and either story 60 or story 59.

Table 4-29

Semantic Acceptability by Story

	Story 59/60		Story 61	
	Unacceptable	Fully Acceptable	Unacceptable	Fully Acceptable
8H	15.0	58.3	29.6	38.2
10L	40.9	21.1	61.1	8.0
10LA	15.6	47.0	41.2	20.4
10HA	14.1	53.5	32.4	28.2
10H	7.5	72.7	22.3	46.6

Regardless of the relative efficiency or inefficiency of the readers in each group, all groups make fewer semantically acceptable miscues reading the more difficult selection (story 61). The percentages of semantically unacceptable miscues and miscues fully acceptable within the passage are most indicative of the influence of the text (see Table 4-29).

The 10L readers, producing 40.9% semantically unacceptable miscues reading story 59, increase that percentage by 20% in their reading of story 61 (61.1%). The fully acceptable miscues produced by this same group were reduced from 21.1% (story 59) to 8% (story 61), the lowest percent of full semantic acceptability for any group reading any story.

The 10LA group shows the greatest increase in percent of miscues that are unacceptable: 15.6% for story 60, 41.2% on story 61. Likewise the percent of miscues fully semantically acceptable is greatly decreased in the reading of the more demanding selections: three of the five groups reduced their percents of fully acceptable miscues by more than 25%: 10LA, 10HA, 10H.

These low percentages of full semantic acceptability and high percentages of unacceptability in the reading of story 61 are caused in part by the large number of nonword substitutions made by all groups. Another contributing factor is the author's use of simile and metaphor, which many readers fail to penetrate. Their substitution of real but inappropriate words in such figures of speech often create anomalous sentences and cause a loss of meaning.

#### Semantic Change

Semantic change is a measure of the extent to which the reader's miscue has altered the meaning of a sentence within the context of the entire story. Semantic change is only coded when, in fact, the reader's miscue is acceptable either within that sentence or within the entire passage; miscues which are only partially acceptable are not measured for meaning change.

A nine point scale is used in this category, in some respects parallel to the nine point scale used to determine syntactic proximity. A score of nine indicates that the meaning of the text has not been altered in any way; a score of zero shows that the reader's miscue has produced a sentence that is anomalous to the rest of the story. (Because of our consistent attitude toward dialect, all dialect miscues are automatically coded as causing no semantic change.) Points 0 through 5 on the scale all measure varying degrees of semantic inconsistency and loss of meaning; points six through eight indicate relatively minor semantic rearrangements, from the change or loss of a minor detail to a slight change in connotation or the use of a similar name.



Our data shows that very few semantically acceptable miscues cause great meaning change (see Table 4-30).

Table 4-30

Percent of Semantically Acceptable Miscues  
with Semantic Change  
Coded 5 or Below

Low Groups		Average Groups		High Groups	
2L	38.3	2L	17.9	2H	20.5
4L	25.7	2HA	11.0	4H	16.8
6L	21.5	4A	13.9	6H	13.9
8L	12.5	6A	6.8	8H60	10.3
10L59	12.0	8A	13.2	10H60	11.3
10L61	16.3	10LA60	7.8	8H61	26.2
		10HA60	11.7	10H61	13.4
		10LA61	14.0		
		10HA61	27.4		

Among both the low and the high groups, there exists an obvious movement toward less semantic change among successively higher grade levels. Among low groups the scores progress from 38.3% major semantic change (2L) to 12% (10L59), though the reading of the more difficult essay (story 61) raises the percentage again among the tenth-graders. Among the proficient readers there is no group with percentages as high as the 2L and the 4L, but the scores progress from 20.5% (2H) to 10.3% (8H60), with the tenth-grade group only one percent above (11.3% - 10H60). Again these readers produced more acceptable miscues causing major semantic change in their performance on story 61.

Average groups of successively higher grade levels show a much less clearly marked development toward less semantic change. The 2LA group shows the highest percent (17.9%) and the 10LA one of the lowest (7.8%), but the intervening grade levels produce varying scores. The 6A group shows the lowest percent of major semantic change of any group (6.8%). As with low and high readers, story 61 causes more miscues of greater semantic change.

Percents of acceptable miscues producing a major change in meaning are related not only to grade level but also to proficiency (see Table 4-31). All low groups produce acceptable miscues resulting in semantically anomalous sentences (scored zero on our scale of meaning change); the highest percent of these is 3.6% (10L61). Among high readers, however, only two groups show any percentage of such miscues (8H60 - .7%, 10H60 - 1.5%). Among

average groups, again the percents are more varied. Two groups produce no miscues anomalous to the rest of the story; the 10HA61 group shows the highest percent of 4.9%. This figure, however, represents only five miscues of a total 102.

Table 4-31  
Semantic Change by Rank

Group	✓	Low			Moderate			High		
		1	2	3	4	5	6	7	8	9
2L	2.5	6.2	-	7.4	22.2	-	13.6	6.2	28.4	13.6
4L	2.7	.9	-	7.1	11.5	3.5	17.7	8.0	26.5	22.1
6L	.8	-	-	.8	15.9	4.0	16.7	5.6	19.8	36.5
8L	.4	-	-	2.7	6.3	3.1	16.6	10.7	26.0	34.5
10L59	.3	-	-	1.0	5.5	5.2	22.7	8.2	21.3	35.7
10L61	3.6	-	-	-	1.8	10.9	21.8	16.4	21.8	23.6
2LA	-	-	.6	3.1	11.1	3.1	22.2	13.0	32.1	14.8
2HA	1.0	-	-	3.0	4.0	3.0	15.2	11.1	26.3	36.4
4A	.8	2.3	-	-	8.5	2.3	17.8	10.9	31.0	25.4
6A	-	-	-	1.6	4.2	1.0	16.2	15.7	27.2	34.0
8A	1.0	1.0	.7	2.0	5.4	3.1	14.3	17.3	35.4	19.7
10LA60	.6	-	.3	1.0	2.9	1.0	12.0	11.0	28.9	42.2
10HA60	1.6	.4	-	1.6	6.2	1.9	18.2	9.3	30.2	30.6
10LA61	1.2	-	-	2.3	3.5	7.0	31.4	8.1	31.4	15.1
10HA61	4.9	-	-	-	7.8	14.7	13.7	13.7	22.5	22.5
2H	-	-	.8	3.3	9.0	7.4	10.7	10.7	32.8	25.4
4H	-	-	-	2.5	6.8	7.5	15.5	17.4	23.6	26.7
6H	-	.5	1.4	1.4	4.8	5.8	21.7	8.2	24.6	31.4
8H60	.7	1.1	-	1.8	3.9	2.8	6.4	5.3	27.6	50.5
10H60	1.5	.5	-	.5	3.9	4.9	12.2	6.3	29.3	41.0
8H61	-	-	-	3.2	7.1	15.9	10.3	5.6	19.8	38.1
10H61	-	-	-	1.0	5.7	6.7	21.0	10.5	24.8	30.5

Other percentages of miscues creating major anomalies or causing a serious loss of meaning are very low, or non-existent, with the single exception of the 2L group. Miscues which have semantic acceptability usually alter only slightly the meaning of the text; the greater losses of meaning tend to produce semantically unacceptable sentences which would not be coded within this category.

Percentages of semantic change increase rapidly, however, with regard to unimportant details, noncritical changes in person,



tense, or number, slight changes in connotation and the use of similar names.

Six groups have relatively high percents of miscues involving changes or losses of unimportant details: 10L59 - 22.7%, 10L61 - 21.8%, 2LA - 22.2%, 10LA61 - 31.4%, 6H - 21.7%, 10H61 - 21%. Percentages of all other groups are less than 20%.

Miscues involving noncritical changes in person, tense, and number occur less frequently. Four groups exceed 15%: 10L61 - 16.4%, 6A - 15.7%, 8A - 17.3%, and 4H - 17.4%.

Most frequent of all degrees of change are those miscues involving only a slight change in connotation or a similar name that does not confuse the cast of characters in the story (an 8 in the coding scale). The lowest percentage of miscues of this type is 19.8% (both 6L and 8H61). Four groups exceed 30%: 2LA - 32.1%, 8A - 35.4%, 10LA61 - 31.4%, and 2H - 32.8%. These percents are particularly high due to the large number of fully acceptable name substitutions for story characters having no real life outside the reading materials. The readers' numerous variations of the names Dr. Ganderbai in story 60, Mr. Barnaby in story 59 and Elisabeth in story 51 contribute to these higher figures.

Percents of acceptable miscues involving no semantic change whatsoever are higher than those for any measure of change. The range of these percents, however, is likewise extremely wide (2L, 13.6% to 8H60, 50.9%). Four groups have scores less than 20%: 2L, 13.6%; 2LA, 14.8%; 8A, 19.7%; 10LA61, 15.1%. Three groups have scores over 40%: 10LA60, 42.2%; 8H60, 50.9%; and 10H60, 41%. It must be remembered that miscues causing no semantic change include dialect miscues, and the relatively high percentage shown by groups such as 6L (36.5%) is due in large measure to dialect.

The text material has a very measurable effect upon the degree of semantic change in acceptable miscues.

Table 4-32

Percent of Miscues Causing No Semantic Change

	Story 59/60	Story 61
8H	50.5	38.1
10L	35.7	23.6
10L.	42.2	15.1
10HA	30.6	22.5
10H	41.0	30.5

Every group reading those two selections shows a higher percent of miscues causing no semantic change in their performance on the easier story. In some groups, dialect miscues contribute to this high percent, but the group with the most miscues involving no meaning change (8H - 50.5%) has no dialect miscues at all. In spite of the fact that MPHW goes up for each of these groups in their reading of story 61, the percent of miscues causing no semantic change goes down considerably. It is in light of data such as this that a distinction between the quantity and the quality of readers' miscues becomes particularly relevant.

#### Relation of Grammar and Meaning

As we stated in Chapter 3, syntactic and semantic acceptability, while very much interrelated, are coded separately because readers can and do produce very grammatical nonsense. But semantic acceptability is dependent upon and limited by syntactic acceptability: without a grammatical structure which is acceptable within the dialect of the reader, the meaning of the text is at least uncertain, at most entirely lost. Reflecting this reality, semantic acceptability is never coded higher than syntactic acceptability within the taxonomy. And also for this reason each reader's percent of semantic acceptability is lower than his percent of syntactic acceptability. The gap between the two scores, however, is not a constant one, but rather varies according to the influence of several factors: the reader's proficiency, the text material, and, to a lesser extent, his grade level.

Syntactic and semantic acceptability scores tend to be closest together for the high groups of proficient readers (see Table 4-33). The 2H group shows a very small gap between the acceptability of grammar and meaning: 8.8%. The 8H60 group also shows the smallest discrepancy for any of the eighth grades: 12.4%. The 10H60 group has a percentage of 8.7%, and each tenth grade group in successively lower proficiency groups has an increasingly large gap between syntactic and semantic acceptability:

	Syntactic Acceptability	Semantic Acceptability	Gap
10L59	58.8	27.9	30.9
10LA60	71.5	55.3	16.2
10HA60	78.6	65.3	13.3
10H60	89.3	80.6	8.7

The 6A readers' performance corresponds to their performance in other aspects of this study: they do considerably better than the 6H group, at least in part because their reading task appears to have been relatively easy for them. The 6A group shows higher percents of acceptability and a smaller gap between the two: 13.5%.

Table 4-33

## Relation of Grammar and Meaning

Group	Syntactic Acceptability	Semantic Acceptability	Gap Between Syntactic and Semantic Acceptability
2L	48.5	34.5	14.0
2LA	67.4	45.7	21.7
2HA	56.9	35.5	21.4
2H	57.2	48.4	8.8
4L	42.4	30.5	11.9
4A	54.6	33.9	20.7
4H	67.9	54.5	13.4
6L	49.3	22.8	26.5
6A	76.5	63.0	13.5
6H	64.7	43.0	21.7
8L	54.4	35.9	18.5
8A	69.5	51.5	18.0
8H60	78.7	66.3	12.4
8H61	71.2	47.2	24.0
10L59	58.8	27.9	30.9
10LA60	71.5	55.3	16.2
10HA60	78.6	65.3	13.3
10H60	89.3	80.6	8.7
10L61	38.5	11.3	27.2
10LA61	58.4	29.1	29.3
10HA61	66.8	36.7	30.1
10H61	80.9	53.9	27.0

The fourth grade groups show increasing percents of syntactic and semantic acceptability within increasingly proficient ranks, but the gap between the two does not decrease with proficiency. On the contrary the 4L group shows the least discrepancy between syntactic and semantic acceptability, largely because both scores are so low. The 4L syntactic acceptability score is the second lowest of any group (42.4%). The gap between grammar and meaning acceptability is only 11.9%. The scores of the 4L group and other groups with extremely low syntactic acceptability (2L - 48.5%, 6L - 49.3%, 10L61 - 38.5%) demonstrate that the greater the difficulty the reader encounters with the grammar of a text, the greater effect this will have upon his ability to process meaning.

This point is further clarified by a comparison of the scores made by all the groups reading story 61 and one other story. The differences between syntactic and semantic acceptability scores remain quite constant among all groups regardless of proficiency in the reading of the magazine article containing intricate syntactic structures. The greater the difficulty in processing syntax encountered by each of the successively less proficient groups, the greater is their difficulty in recovering meaning. Hence the gap between syntactic and semantic acceptability remains virtually constant.

	Syntactic Acceptability	Semantic Acceptability	Gap
10L61	38.5	11.3	27.2
10LA61	58.4	29.1	29.3
10HA61	66.8	36.7	30.1
8H61	71.2	47.2	24.0
10H61	80.9	53.9	27.0

The gap between these scores remains basically the same, but the ratios increase with respect to proficiency. The ratio of syntactic to semantic acceptability progresses approximately as follows: 10L61, 4:1; 10LA61, 2:1; 10HA61, 7:4; 8H61, 7:5; 10H61, 8:5. All of these same groups have higher percents of both syntactic and semantic acceptability in their readings of story 59 and 60, however, because these were much easier tasks. Though percents of acceptability increase as proficiency increases, just as they do in the readings of story 61, the range of scores across proficiency groups is not as great. The complexity of the more difficult magazine article has a greater affect on the poorer readers than it does on the proficient readers:

	Syntactic Acceptability		
	Story 59/60	Story 61	Difference
10L	58.8	38.5	20.3
10LA	71.5	58.4	13.1
10HA	78.6	66.8	11.8
8H	78.7	71.2	7.5
10H	89.3	80.9	9.0

Story 61 reduces the grammatical acceptability of the poorer readers by as much as 20.3%, whereas the proficient readers are much less affected; 7.5% (8H) and 9% (10H). For this reason the gap between syntactic and semantic acceptability also varies with proficiency in the reading of story 60 and 61. An overall look at the scores representing this gap indicates that an ability to produce acceptable meaning varies more greatly than the ability to

produce acceptable syntax. This is yet another reason for concluding that semantic acceptability is the more accurate indicator of reading proficiency.

### Levels of Miscue Involvement

In most research on errors in reading the word is treated as the only linguistic unit worth considering. But language may be viewed from many vantage points, and the size of the unit in focus will provide different insights into language and how it works.

In our studies we take a multi-level approach, considering each miscue in terms of changes between ER and OR on each level.

The miscues that readers make vary as the units of language they involve vary, according to size, function, and complexity. A reader may alter sounds, or inflections, or entire words, or even phrases and clauses as he deviates from the text. Frequently, a single miscue may affect several or even all of these different levels of language. In order to discover as much as it is possible to say about any given miscue, we therefore examine it at (a) the submorphemic level, (b) the bound and combined morpheme level, (c) the word and free morpheme level, (d) the phrase level, and (e) the clause level.

The interrelatedness of these levels is apparent in a miscue such as the following:

OR		can	
ER	...there isn't anything you	can't	say or do.

The eighth-grader, who made this miscue, alters the text in many ways. At the submorphemic level, we may say that she omits the final phoneme. At the bound and combined morpheme level she omits the negative contractional suffix. At the word and free morpheme level, a single morpheme word is substituted for a multiple morpheme word. Additionally, the verb phrase is altered, and the entire clause is negated. All levels of language process are touched by the deletion of a single sound.

Though these five areas of processing affect language at varying degrees of depth, it is still true that in each area the same phenomena may occur. Sounds, words or portions of words, phrases, and even clauses may be omitted, or inserted, or substituted for one another. Sometimes they may be reversed. And the occurrence of one kind of phenomenon at one level may trigger a different phenomenon at another level. An omission of a negative contractional suffix such as in the example previously mentioned may result in the substitution of an affirmative clause for a negative one.

## Submorphemic Level

Let us begin with a discussion of readers' miscues as they affect the submorphemic level of language, the level of sounds. We call individual sounds "submorphemic" because they are the units of language too small to carry meaning. They are sub-morphemic, or smaller than the morpheme which is the smallest meaning-bearing segment of a language. For the purposes of the research we have limited submorphemic differences to one and two phoneme sequences, and to multiple minor phonemic variations which are not sequential. Miscues involving a sequence longer than two phonemes are not coded at the submorphemic level. It is for this reason that many miscues are not coded at this level at all. Table 4-34 indicates the percents of miscues that are submorphemically involved.

Group means do not fully represent the data at this level. Readers vary greatly in the extent to which they involve the submorphemic level: a look at the range of each group gives a much more accurate picture of what in fact actually happens (see Figures 4-4, 4-5, 4-6, 4-7).

Where the submorphemic level is not involved the group ranges are very great (see Figure 4-4 for zero submorphemic involvement.) This means that between 50 and 60% of the miscues either involve no sound change whatsoever or, what is considerably more frequent, that the sound changes are so great as not to be recorded in this category. Individuals within groups often differ from each other by as much as 40%: the 2H readers range from 39.3% to 78% zero submorphemic involvement, 6A readers vary from 42.6% to 88%, 8A readers from 3.1% to 73.8%, 8H readers from 46.7% to 91.4% and 10L59 readers differ from 30.2% to 70.2%.

Since the percentages of zero submorphemic involvement reach over 90% (8H, 10H, 2L), clearly the percentages of miscues that are submorphemically involved are not very high for these groups. But despite the more limited occurrences of these phenomena, insertions, omissions, and substitutions especially differ significantly among the readers in each group. Of the miscues coded at the submorphemic level, 2A readers range from 9.1% to 40.4% in their use of sound substitutions, 4L readers substitute sounds from 10.9% to 31.6% of the time, 4H readers from 4.7% to 32%, 8A from 10% to 40.9%, and 10HA61 readers vary their use of substitutions from 0% to 34.5% of the time (see Figure 4-5). Some examples of such submorphemic level substitutions include the following:

OR	went	silence	he	beyond
ER	bent	silent	we	behind

Insertions of phonemes occur far less frequently (see Figure 4-6). When a singular noun becomes plural, when an adjective becomes an adverb, or when some preposition take on their variant forms (toward, towards; round, around), a phoneme or sequence of

Table 4-3\*

## Submorphemic Level

Group	Not Involved	Substitution	Insertion	Omission	Reversal	Multiple Minor Variations
2L	83.4	11.5	1.7	1.3	-	1.3
2LA	63.9	18.3	5.4	9.9	0.3	2.3
2HA	48.4	21.3	10.8	17.0	-	2.5
2H	65.6	17.8	6.3	9.5	-	0.8
4L	66.7	20.8	4.5	5.9	-	2.1
4A	59.9	18.2	4.5	13.5	-	4.0
4H	64.7	18.2	3.4	10.3	-	3.4
6L	58.8	17.2	5.5	19.1	0.2	2.3
6A	57.7	18.1	4.5	18.4	-	1.3
6H	48.5	26.1	6.6	13.9	-	4.8
8L	57.9	18.5	6.5	15.8	0.2	1.1
8A	55.8	18.0	8.0	15.7	0.2	2.3
8H60	70.6	15.2	6.3	7.0	0.2	0.7
8H61	57.6	17.0	7.7	11.1	0.7	5.9
10L59	50.0	19.9	6.1	21.1	0.2	2.8
10L61	53.5	15.9	5.9	17.5	0.4	6.9
10LA60	63.8	17.0	11.8	4.8	-	2.5
10LA61	50.0	24.0	9.8	8.1	1.7	6.4
10HA60	63.1	20.4	9.4	5.7	0.2	1.2
10HA61	57.6	23.5	8.7	6.8	1.1	2.3
10H60	69.0	14.9	9.0	6.3	0.4	0.4
10H61	58.5	14.6	11.7	12.7	0.5	2.0

phonemes may be inserted. A frequent cause of phonemic insertions among the 6L group is their use of such supercorrect dialect forms as: lookeded, smileded, wisheded, likeded. But in spite of their less frequent insertions, 6L readers range from 1.6% to 18.5%, 6H readers differ from 0% to 12%, 8H61 from 0% to 12.1%, 10LA61 from 5.9% to 18%, 10HA60 readers from 6.1% to 20% and 10H61 from 2.3% to 21.1%.

Some examples of phonemic insertions include the followings:

OR	it's	that	trees	lookeded	Mr. Barnaberry
ER	it	at	tree	looked	Mr. Barnaby



Figure 4-7 shows the ranges and means of submorphemic omissions for each group and the stories they read. Readers in eight of the groups differ from each other by 20% or more. And some readers in the eight groups exceed a percentage of 25% omissions: 2HA - 33.3%, 4A - 34%, 6L - 30.6%, 6A - 27.9%, 6H - 26.8%, 8L - 29.5%, 10L59 - 37.8%, and 10L61 - 32.9%. Individual readers in four groups make no miscues involving submorphemic omissions: 2L, 2H, 8H60, 10HA60 - 0%. Some examples of submorphemic omissions include the following:

OR    ban     money    he     you  
ER    began  monkey  here  your

More than half of the dialect miscues may be by readers in this study involve omissions at the submorphemic level. To make that statement from another point of view, Table 4-35 demonstrates what percents of submorphemic omissions involve dialect. More than 50% of the submorphemic omissions are dialect-linked in six different groups: 2HA, 4L, 6L, 8L, 10L59 and 10L61. Examples of each dialect involved submorphemic omissions include the following:

OR    ...I think just about everybody likes baby.  
ER    ...I think just about everybody likes babies.

OR    "You see," I said, "it help me to remember...."  
ER    "You see," I said, "it helps me to remember..."

A lesser number of submorphemic insertions are also dialect linked. The largest percentage of these, 37.5%, is produced by the 6L group. The 6L, 10L61 group and 10LA60 group make submorphemic insertions about 25% of which involve dialect. As was previously mentioned, these include such super correct forms as: pickeded, campeded, stoppeded, which are produced by many readers but especially group 6L. Also included are insertions caused by the British English dialect of the story Poison (60).

OR    Could you come around...?  
ER    Could you come round...?

OR    do it quickly           OR    lying very quietly  
ER    do it quick            ER    lying very quiet

Nine groups out of twenty-two produce no submorphemic reversals. Only two of these nine show a group percentage of reversals that exceeds 1%: 10HA61 - 1.1%, 10LA61 - 1.7%. It must be remembered that the reversal of letters does not automatically imply the reversal of sounds. The words was and saw have no phonemes in common, and the words on and no share only one.

OR    \$venon     \$calberations  
ER    venom     calibrations



Figure 4-4

Percent of Miscues With No Submorphemic Involvement:  
Ranges and Means By Group

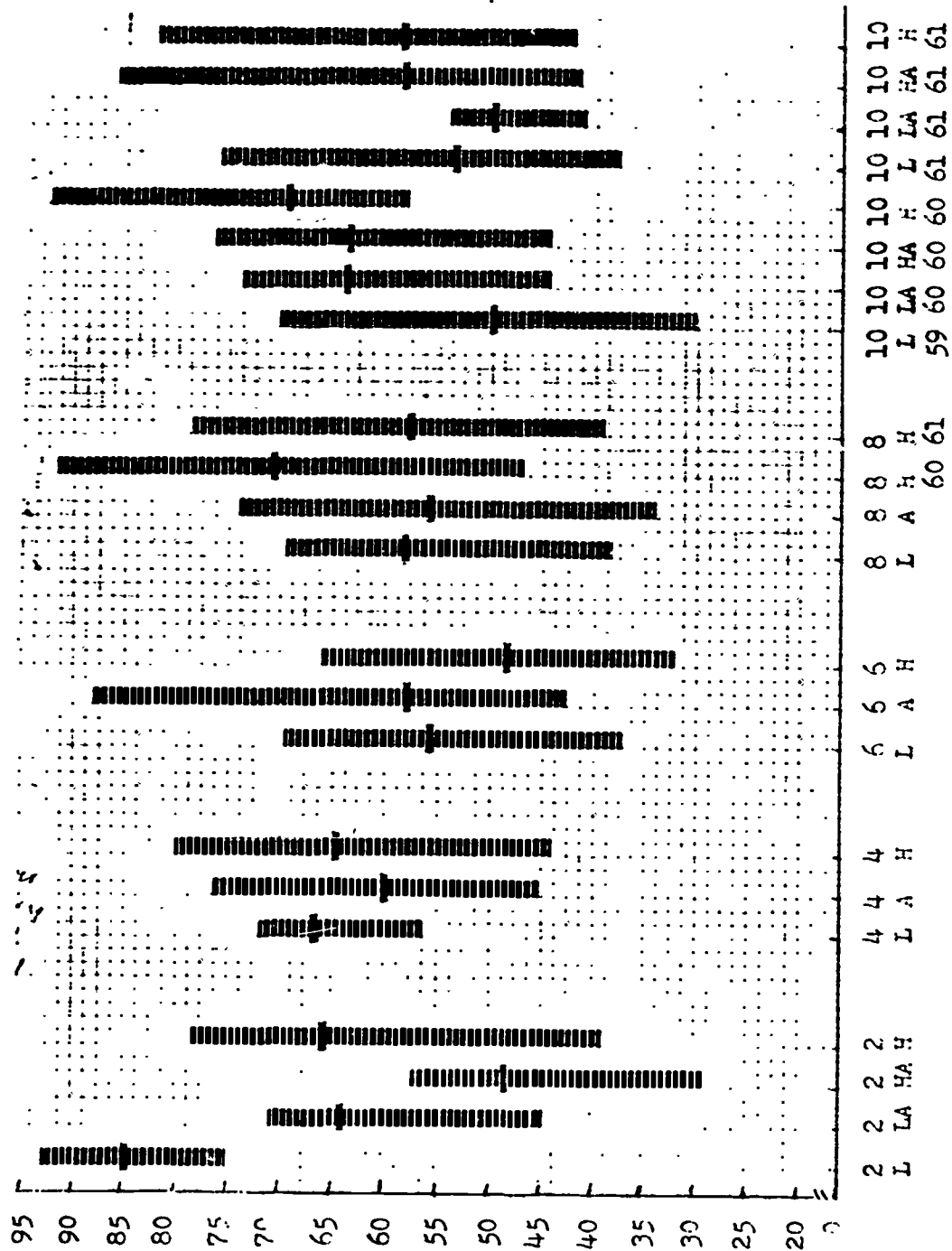


Figure 4-5  
 Percent of All Miscues Involving Submorphemic Substitutions:  
 Ranges and Means By Group

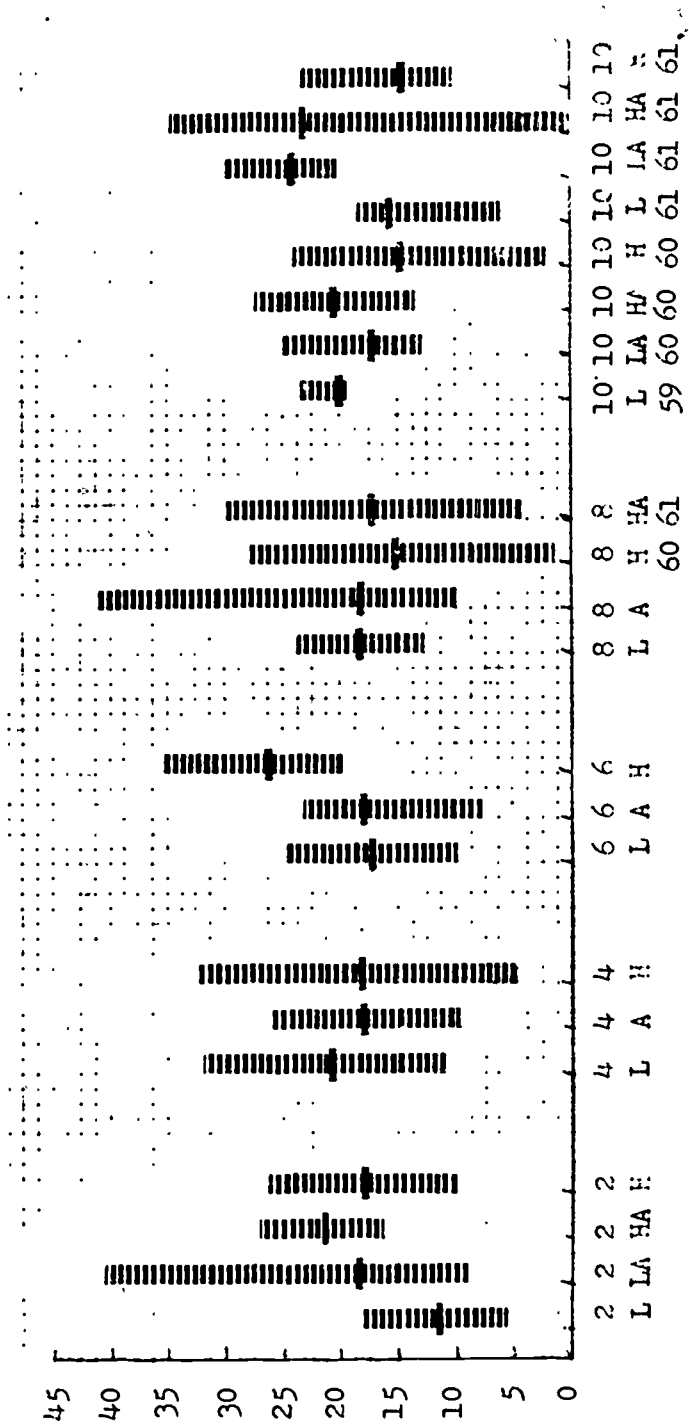


Figure 4-6

Percent of All Miscues Involving Submorphemic Insertions:  
Ranges and Means By Group

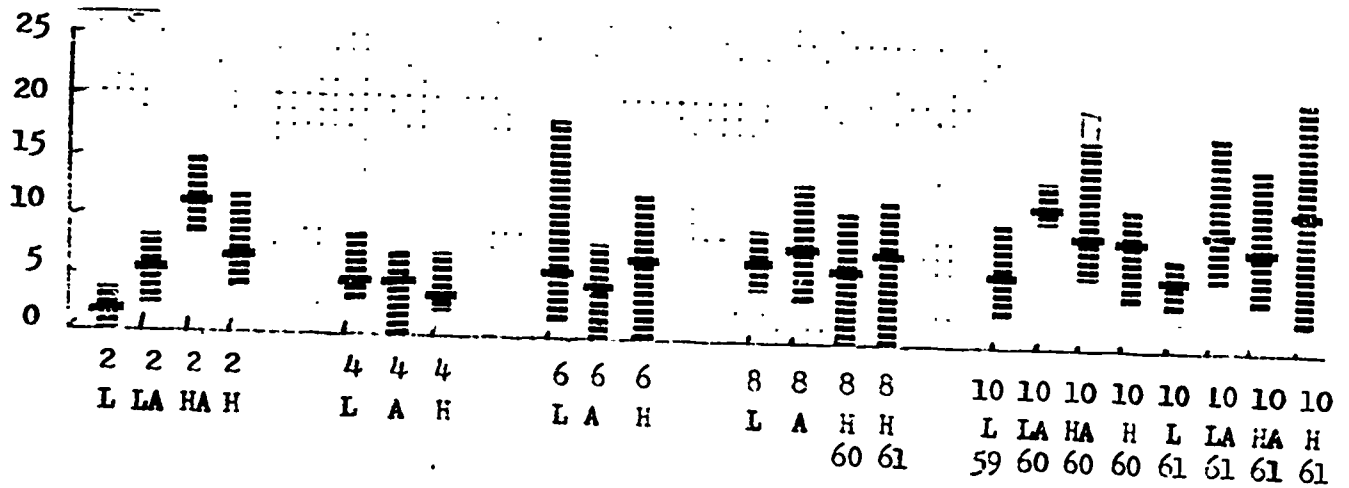


Figure 4-7

Percent of All Miscues Involving Submorphemic Omissions:  
Ranges and Means By Group

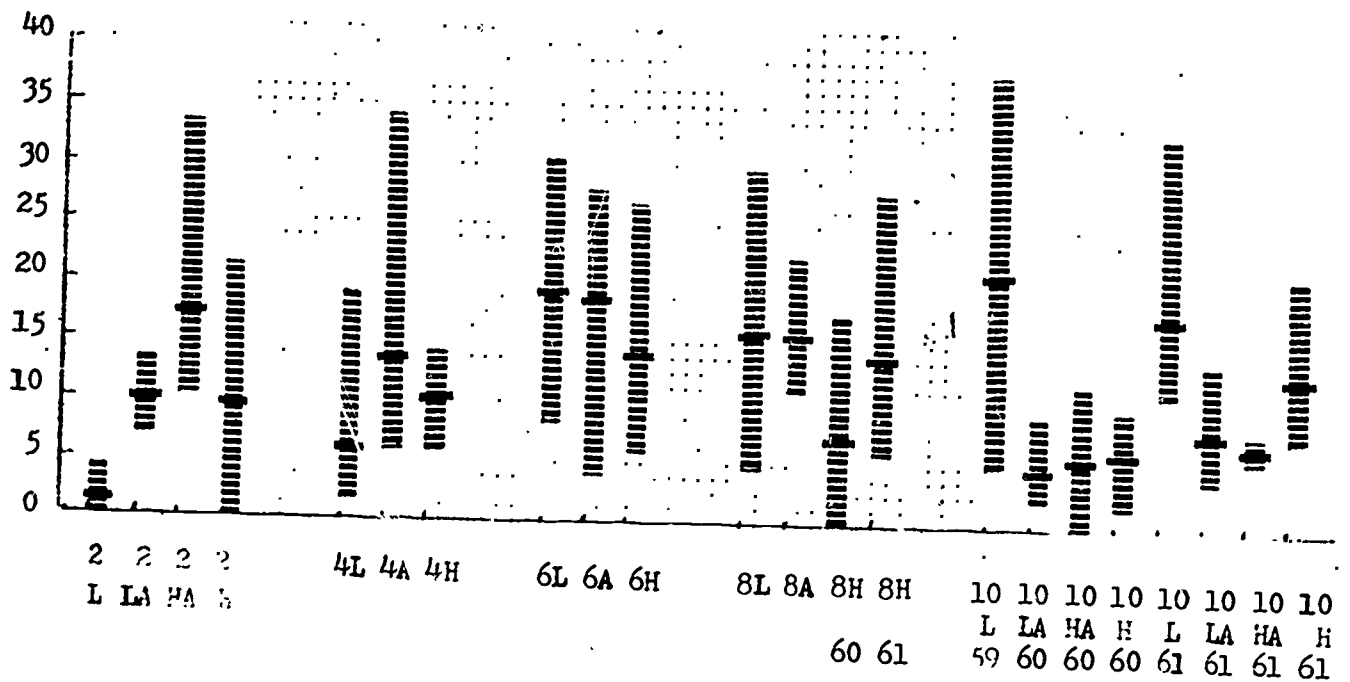


Table 4-35

Percent of Submorphemic Insertions and Omissions  
that are Dialect Involved

Group	Insertions	Omissions
2L	-	33.3
2LA	16.7	22.7
2HA	-	55.6
2H	-	-
4L	6.7	60.0
4A	11.1	39.5
4H	-	-
6L	37.5	68.8
6A	25.0	43.9
6H	9.1	22.2
8L	13.3	73.3
8A	-	5.1
8H60	16.7	-
8H61	-	5.9
10L59	5.9	55.2
10L61	25.0	63.9
10LA60	26.3	30.0
10LA61	-	5.3
10HA60	-	13.3
10HA61	-	6.7
10H60	5.0	7.1
10H61	-	-

Multiple minor variations do occur in all of the groups reading all of the stories, but the percentages of multiple minor variations are far below those of substitutions, insertions, or omissions. Only five of the same twenty-two groups have more than 4% miscues involving multiple minor variations: 4A - 4%, 6H - 4.8%, 8H61 - 5.9%, 10L61 - 6.9%, and 10LA61 - 6.4%.

OR	string	Dr. Granderby	left
ER	syringe	Dr. Ganderbai	lifted

#### Bound Morphemes

Bound morphemes are morphemes which do not occur in free forms. They are the combining parts of words which separate meaning or change the grammatical function of the word. An 'apostrophe s' joined at the end of a proper name adds the concept of possession: John, John's. An -ly attached to a noun modifier creates a

modifier of a verb: rapid - rapidly.

Bound morphemes are of several types. The two examples just mentioned are both inflectional endings within the framework of the taxonomy, but there are non-inflectional bound morphemes as well. The vowel shifts in irregular verbs (come, came) and nouns (foot, feet) are examples of non-inflectional bound morphemes. Other types include contractions, derivational endings such as -tion and -ate, and prefixes.

Just as is true of other levels of language process these bound morphemes may be substituted for one another, inserted, omitted or reversed. This category, however, is consistent with others in the taxonomy with regard to dialect. The reader who says "he go" for "he goes" because it is acceptable within his dialect to do so has omitted a bound at the submorphemic level. But he has not omitted the third person singular morpheme. Since the absence of any inflection is itself a signal that can be considered a 'null' inflection, then we say that the reader has substituted that null inflection for another one. In so doing he has equally marked the verb with person, tense, and number to the extent that his dialect requires him to do so.

For all groups, excluding 2L, an average of 25% of all miscues are involved at the bound morpheme level. The least bound morpheme activity occurs in the 2L group (91.9% uninvolved); the 4L group also shows very little activity (85.4% uninvolved). The most bound morpheme involvement appears in the 6L and 10L60 groups (69.7% and 66.8% uninvolved, respectively). The 8L readers maintain roughly the average of all the groups: 72% uninvolved (see Table 4-36).

Of the 25% average involvement at this level, just over half (13%) consists of substitutions. The percentage of substitutions exceeds the percentage of insertions and the percentage of omissions in every group but one: 8H60. For this group the percentages are approximately the same: 4.2% substitution, 4.9% insertion, 4% omission. Substitutions for all other groups range, however, from 6.1% (2L) to 23.4% (10L59). Low readers in the upper grades use bound morphemic substitutions to a much greater extent than do younger or more proficient readers: 6L - 22.7%, 8L - 18.4%, 10L59 - 23.4%, 10L61 - 21.5%.

This is partially true because of our research consistency in coding certain dialect miscues as bound morphemic substitutions rather than omissions. Still other groups show high dialect involvement and yet do not show such a high percentage of substitutions. Furthermore, not all substitutions involve inflections.

Since more than half the activity at the bound morpheme level consists of substitutions, both insertions and omissions are involved to a much lesser extent. For all groups, an average of 3% of the miscues are insertions. Likewise the omissions

Table 4-36

## Percent of Bound Morpheme Miscues by Types

Group	Percent Non- Involvement	Percent Substitutions	Insertions	Omissions	Reversals
2L	91.	5.0	1.3	0.9	-
2LA	77.7	15.9	3.1	2.3	-
2HA	75.3	14.5	6.5	3.6	-
2H	84.3	7.5	2.4	5.5	0.4
4L	85.4	1.7	2.2	0.8	-
4A	72.8	1.7	2.6	8.4	-
4H	80.1	17.6	3.1	6.2	-
6L	69.7	22.7	3.2	4.1	0.2
6A	71.8	16.1	2.6	9.2	0.3
6H	83.8	12.1	1.2	2.9	-
8L	72.0	18.4	2.7	5.9	1.0
8A	74.2	16.5	2.7	6.1	0.5
8H60	86.9	4.2	4.9	4.0	-
8H61	81.7	9.9	1.8	6.2	0.4
10L59	66.8	23.4	2.6	6.8	0.4
10L61	66.6	21.5	2.2	9.7	-
10LA60	83.5	9.3	4.1	3.0	-
10LA61	84.7	7.8	2.7	4.8	-
10HA60	81.6	11.5	3.2	3.4	0.2
10HA61	78.7	13.3	3.4	4.6	-
10H60	83.7	7.8	6.2	2.3	-
10H61	79.4	11.3	3.4	5.9	-

average 4.6% for all groups. Reversals are few in number, and exist in fact in only eight of the twenty-two groups. The average percentage for each of these eight never exceeds 1%.

Four types of morphemes have the most miscues: inflections, non-inflectional morphemes, contractions, and derivational endings. However, the 6H and the 10LA61 groups show no non-inflectional involvement, and the 10H60 group shows no derivational activity (see Table 4-37).

Just as substitutions occur most frequently at the bound morpheme level, inflections are most frequently the sub-category of bound morpheme involvement. Nine groups have over 15% inflectional activity, but no high groups appear among them. All groups of all ranks, however, make more miscues on inflectional

Table 4-37

## Percent of Bound Morpheme Miscues by Sub-Category

Group	Not Involved	Inflectional Suffix	Non-Inflectional Suffix	Contractional Suffix	Derivational Suffix	Prefix	Miscues Across Affix Types	Miscues Involving Base
2L	91.9	3.4	2.1	1.7	0.9	-	-	-
2LA	77.7	17.5	1.1	1.7	0.6	-	1.4	0.3
2HA	75.6	19.6	1.1	1.1	1.8	0.4	0.4	-
2H	84.3	16.2	0.8	2.4	0.8	1.2	-	0.4
4L	85.4	9.5	3.3	0.8	0.5	-	-	0.5
4A	72.8	18.2	0.3	4.2	1.1	0.8	2.6	-
4H	80.1	11.0	2.7	4.1	0.7	0.3	1.0	-
6L	69.5	23.8	1.4	1.1	2.7	-	0.2	1.3
6A	71.8	18.4	1.3	5.2	1.3	1.0	1.0	-
6H	83.8	13.5	-	0.2	1.0	0.4	0.6	0.4
8L	72.0	18.5	1.0	5.3	1.3	0.5	1.3	0.2
8A	74.2	19.7	0.0	1.7	2.9	0.3	0.7	0.3
8H60	86.6	6.6	0.7	4.2	0.9	0.7	-	0.2
8H61	82.1	7.0	1.1	4.0	2.9	2.9	-	-
10L59	66.8	27.4	0.9	1.3	1.9	0.5	1.0	0.3
10L61	66.6	21.1	0.8	1.2	6.6	1.8	1.8	-
10LA60	83.7	7.7	2.0	3.2	1.6	1.3	0.5	-
10LA61	84.7	8.2	-	0.7	3.1	3.1	-	0.3
10HA60	81.6	6.6	2.7	4.9	1.7	0.7	1.7	-
10HA61	78.7	10.3	3.4	1.9	4.9	0.4	0.4	-
10H60	82.9	7.4	1.6	5.4	-	1.9	0.4	0.4
10H61	79.4	11.3	1.0	2.9	3.9	0.5	1.0	-

endings than any other type of bound morpheme.

The lowest percent of inflected ending miscues appears in the 2L group (3.4%). This figure, like the percents of all other bound morphemes for the 2L group, is low in part because of the text material read by these students. Very few bound morphemes are included by the authors of these stories (22 and 24).

Other groups show percents of inflectional endings beginning at 6.6% (8H60, 10HA60). Examples of these miscues are as follows:

Substitutions	Insertions	Omissions
OR gathered ER gathering	OR quickly ER quick	OR else ER else's
OR lower ER lowest	OR hanging ER hang	OR bit ER bitten

Non-inflectional bound morphemes occur much less frequently and are miscued upon only up to 3.4% (10HA61). The 4L, 4H, and 10HA60 also show relatively high percentages (3.3%, 2.7% and 2.7% respectively). There appears to be no pattern according to rank or grade level. Some examples, all of which are considered to be substitutions, are as follows:

OR swung	lie	hung	was	mouse
ER swing	lay	hang	were	mice

All groups make miscues involving contractional endings, ranging from 2% (6H) to 5.4% (10H60). These miscues do not, however, involve the substitution of a contraction for a full form or vice versa; both of these cases are considered to be allolog miscues. At the bound and combined morpheme level are coded the insertion and omission of contractional suffixes and the substitution of one of these for another. Some examples are as follows:

Substitutions	Insertions	Omissions
OR it's ER you've	OR couldn't ER could	OR we ER we're
OR I'm ER I'll	OR you're ER you	OR that ER that's

Only one group has no miscues involving derivational endings (10H60). All other groups range from .5% to 6.6% (10L61) involvement. This activity appears to have no relationship to grade or rank, but the text is, in fact, an influence:

Grade	Story 59/60	Story 61
8H	0.9	2.9
10L	1.9	6.6
10LA	1.6	3.1
10HA	1.7	4.9
10H	0.0	3.9



The use of language in story 61 is sophisticated to the extent that it includes many such derivational morphemes; however, both stories 59 and 60 are written in a simpler, more conversational style. Some examples of miscues involving derivational endings are the followings:

Substitutions	Insertions	Omissions
OR hopelessly ER hopefully	OR rapidly ER rapid	OR power ER powerful
OR rebellious ER rebellion	OR hungry ER hunger	OR value ER valuable

Also influenced by the text are percents of miscues on prefixes. Four groups show no miscues of this type (2L, 2LA, 4L, and 6L); all of these groups read simple stories with few or no prefixes at all. No group shows more than 2.9% miscues involving prefixes (8H61). The following are examples of this type:

Substitutions	Insertions	Omissions
OR \$reconception ER preconception	OR around ER round	OR possible ER impossible
OR internal ER external	OR enforce ER force	

Six groups have no miscues involving the substitution of one type of bound morpheme for another. The highest percent for any group is 2.6% (4A). Though exceedingly few in number, these are some examples:

OR tickly	poisonous	needed	smiley
ER tickling	poisons	needn't	smiling

Exactly half the groups in this study show bound morpheme miscues caused by a confusion about the base word of the ER. Such miscues may only be substitutions. No group has a percentage over 1.3% (6L), and the second highest percentage is .5% (4L). Examples are as follows:

OR sheeps	mens
ER sheep	men

#### Word level

For a miscue to be coded at the word level, the observed response must include the omission or insertion of a single lexical item, or the clear substitution of a single OR word for a single ER word. Any reordering of the existing elements in the text is coded at the word level as a reversal. Not coded at the word level are miscues which cause no physical change in the text item

but alter its grammatical function, and miscues in which no single item is inserted, omitted, or clearly substituted for another single item.

Despite these two restrictions, more miscues involve the word level than any other level of language process included in the taxonomy. The number of miscues not involved at this level never exceeds 10%. Only 2.1% of all miscues produced by the 2HA group are uninvolved, as opposed to the 9.1% figure of the 2H group. All other groups fall between these two percentages. In other words, more than 90% of all miscues produced by each group are word level miscues (see Table 4-38).

Table 4-38

Word Level by Group

Group	Not Involved	Substitution	Insertion	Omission	Reversal
2L	6.0	70.7	2.8	20.5	-
2LA	6.2	77.2	6.0	10.3	0.3
2HA	2.1	84.8	5.5	7.6	-
2H	9.1	59.3	8.0	22.1	1.5
4L	4.3	75.8	3.1	16.5	0.3
4A	3.0	86.9	2.8	7.1	0.3
4H	4.3	60.9	7.6	25.5	1.7
6L	3.6	84.2	1.4	10.6	0.2
6A	5.3	71.2	8.0	13.6	1.9
6H	6.5	73.2	10.0	10.2	0.2
8L	5.1	78.1	4.9	10.7	1.2
8A	4.1	64.2	17.3	13.9	0.5
8H60	7.6	51.8	17.3	22.0	1.3
8H61	5.5	62.3	12.8	17.6	1.8
10L59	4.4	82.8	6.1	6.4	0.3
10L61	2.9	81.6	5.2	9.5	0.8
10LA60	6.9	64.7	9.5	17.6	1.2
10LA61	6.4	74.7	5.4	12.8	0.6
10HA60	8.1	64.6	7.8	18.5	1.0
10HA61	3.7	74.9	10.9	9.0	1.5
10H60	8.8	47.3	18.7	21.0	4.2
10H61	8.0	59.2	15.0	16.0	1.9

Although most miscues are involved at this level, proficient readers show less involvement than do low or average readers.

Among low groups, miscues uninvolved at the word level range from 2.9% (10L61) to 6% (2L). Among high groups, however, these percentages range from 4.3% (4H) to 9.1% (2H).

The phenomenon most frequently occurring within this category is the substitution. From 47.3% (10H60) to 86.9% (4A) of all miscues involved substitutions of one word for another.

Dialect miscues account for varying percentages of these substitutions. Although five groups (2H, 4H, 8H61, 10HA60, 10H61) show no word level substitutions due to dialect, 20.8% of the substitutions made by 6L readers are dialect miscues. Dialect miscues considerably elevate the percentages of word level substitutions made by five other groups:

Table 4-39

Dialect in Word Level Substitutions

Group	Percent Substitutions	Percent Substitutions of Dialect Forms
6L	34.2	20.8
2HA	84.8	10.1
6A	71.2	12.6
8L	78.1	12.3
10L59	82.8	9.7
10L61	81.6	15.1

The most frequently occurring word level substitution, however is that of one single morpheme word substituted for another (see Table 4-40). Up to 73.3% (2L) word level substitutions are of this type. All groups show at least 30% single morpheme for single morpheme word substitutions, with the one exception of 10L61 (20.7%) whose percentage is lower due to a remarkable percentage of non-words. (42.5% of all word substitutions made by 10L61 are non-words).

There is an interesting pattern in these single for single morpheme substitutions. In the lower grades, low proficiency readers show the highest percentages. Among older children, the most single for single morpheme word substitutions are made by the more proficient readers. Also, these poorer readers in the younger grades are substituting single morpheme words of a different type than the older proficient groups. The 2L group's 73.3% and the 4L group's 72.4% consist mainly of 'content' words: nouns, verbs, and modifiers containing in this instance only one morpheme. The 6H, 8H60, and 10H60 groups' percents of single for

Table 4-40

Percent of Single for Single Morpheme Word Substitutions

2L - 73.3	4L - 72.4	6L - 40.7	8L - 45.0	10L59 - 37.4
2LA - 50.8	4A - 33.4	6A - 41.4	8A - 59.9	10L61 - 20.7
2HA - 47.2	4H - 44.4	6H - 51.5	8H60 - 65.1	10LA60 - 58.7
2H - 54.3				10HA60 - 58.2
				10H60 - 60.3

single morpheme word substitutions (51.5%, 65.1%, 60.3% respectively) consist primarily of function words: a much more limited group of noun markers, verb markers, phrase markers and others which serve to organize the nouns and verbs in the surface structure. Although both younger and older, poor and proficient readers make miscues involving both content and function words, these high percentages of single for single morpheme word substitutions do represent different phenomena according to age and proficiency level.

Grades 2-4

OR  
ER ...would not have changed her white fur coat for anything. *few*

OR  
ER "I give her this pretty bowl for her food." *ball*

Grades 8-10

OR  
ER "Well," I said... *see*

OR  
ER "You may be right." *might*

The second most frequently occurring word level substitution is the non-word (see Table 4-41). All groups show non-word miscues in every story read, but these percentages depend upon grade level and rank, and most especially upon text material. Of all word level substitutions, the 10L61 group has the most non-words (42.5%) and the 2L group has the least (3.4%). Among the low groups, there is an increase in non-words in successive grades: 2L, 2.4%; 4L, 4.3%; 6L, 8.4%; 8L, 9.8%; 10L59, 16.8%; 10L61, 32.4%.

OR  
ER I took a quick pace backward... *quis*

OR  
ER ...and she whined in recognition. *recognition*

OR                                    *stanztrizingly*  
 ER ...staying tantalizingly ahead...

OR                                    *spot*  
 ER And she always had that spot of black fur above her nose.

This non-word response to unknown lexical items gradually overcomes the young reader's tendency to omit them. Percent of omissions are: 2L, 20.9%; 4L, 16.9%; 6L, 10.6%; 8L, 10.7%; 10L59, 6.4%; 10L61, 9.9% (see Table 4-38).

Non words among groups of average and high proficiency readers appear in varying percentages, but it is particularly among the oldest readers performing on two separate tasks that we see the influence of the third variable: the text itself.

Table 4-41

Non-Word Miscues in Readers of Two Stories

Group	Story 59/60	Story 61
8d	6.9	23.8
10L	16.8/59	32.4
10LA	7.1	26.0
10HA	5.9	21.3
10H	3.8	19.7

The readers' response to the more difficult reading task, the magazine essay Generation Gap, is to produce many more non-words for the short story, Poison. The readers' attention to grapho-phonetic and to syntactic cues causes greater accuracy in these areas, whereas concern for semantic cues, that is concern for meaning, is considerably diminished. Hence, the readers of this story produce non-words with high grapho-phonetic proximity which retain the grammatical function of the text word but which have no semantic acceptability.

Although substitutions involving two single morpheme words are the most frequently occurring type, substitutions of multiple for multiple, multiple for single, and single for multiple morpheme words also occur in all groups. There appear to be no outstanding patterns in these percentages. Instead, these figures seem to be higher or lower depending upon the frequency of single for single morpheme word miscues (see Table 4-42).

There is one special type of multiple for multiple morpheme word substitution, however. This is the miscue involving a word

Table 4-42

Types of Word Substitutions								
	1	2	3	4	5	6	7	8
2L	2.3	73.3	6.8	7.4	1.7	-	3.4	5.1
2LA	3.9	50.8	7.8	11.2	11.2	-	11.7	3.4
2HA	7.5	47.2	10.1	7.5	3.0	1.5	13.1	10.1
2H	11.6	54.3	4.7	11.6	8.5	0.8	8.5	-
4L	1.5	72.4	7.7	5.9	1.5	-	5.5	5.5
4A	13.1	33.8	3.8	13.1	8.0	0.4	20.7	7.2
4H	3.9	44.4	6.5	19.6	5.9	0.7	19.0	-
6L	4.0	40.7	9.3	10.6	3.5	0.4	10.6	20.8
6A	3.4	41.4	5.7	21.3	4.6	1.1	9.8	12.6
6H	7.7	51.6	2.7	7.1	10.4	-	16.5	3.8
8L	12.3	39.7	8.3	8.3	6.9	-	12.3	12.3
8A	11.4	40.2	7.6	14.7	7.6	0.5	16.8	1.1
8H60	8.3	54.5	7.6	9.7	3.4	0.7	12.4	3.4
8H61	14.7	30.8	5.6	9.8	2.8	-	36.4	-
10L59	9.7	32.6	8.0	6.3	5.1	0.6	28.0	9.7
10LA60	13.0	49.3	15.1	6.2	6.2	0.7	7.5	2.1
10HA60	10.4	52.6	9.7	7.1	11.0	1.9	7.1	2.1
10H60	8.3	54.1	16.5	10.1	3.7	-	6.4	0.9
10L61	6.1	20.7	5.0	6.1	4.5	-	42.5	15.1
10LA61	13.3	31.9	7.2	6.0	3.0	1.8	35.5	1.2
10HA61	17.4	37.4	6.5	5.8	1.9	1.3	29.0	0.6
10H61	15.1	31.1	6.7	6.7	4.2	2.5	33.6	-

- 1 Multiple for multiple morpheme word
- 2 Single for single morpheme word
- 3 Multiple for single morpheme word
- 4 Single for multiple morpheme word
- 5 Word in longer word
- 6 Compound word
- 7 Non-word
- 8 Dialect alternative

or free morpheme in a longer word. Miscues involving a word or free morpheme in a longer word may only be substituted for one another; they may never be inserted, omitted, or reversed. This is because such words are combinations of one free morpheme and one or more bound morphemes. The bound morphemes may be inflectional endings, prefixes, or others which may only be joined to another word. Again no clear pattern appears, but instead percentages are quite evenly distributed from 1.5% (4L) to 11.2% (2LA).

OR  
ER ...the five black-button noses were <sup>going</sup> groping eagerly.

OR  
ER ...and coughed <sup>expressively</sup> excessively.

The smallest percentage of word level substitutions involves compound words. Eight groups have no such substitutions. Two of these eight groups (2L and 8L) make no insertions or omissions of words in compounds either. The range of substitutions of words in compounds is quite narrow: 0% to 2.5% (10H61). Only five groups show more than 1% (see Table 4-42).

OR  
ER They packed mother <sup>Whitewoods</sup> Whitemoon's baskets carefully.

OR  
ER <sup>Something</sup> Sometimes it's worse.

OR  
ER ...he found the trancon <sup>without</sup> within easy reach.

Word level insertions and omissions seem to have an inverse relationship to rank. Low groups make very few insertions: the average of the low group means is 3.9%; the range is 1.4% (6L) to 6.1% (10L59). High groups, on the other hand, make many more word level insertions: the average of the group means is 12.7%; the range is 7.6% (4H) to 18.7% (10H60). Average groups are indeed average: the mean for these groups is 8.1%; their range of insertions is wide, 2.8% (4A) to 17.3% (8A).

Insertions, as omissions, may be of three types; single morpheme words, multiple morpheme words, and words in compounds. With these possibilities, it is striking that insertions consist almost entirely of single morpheme words, very few multiple morpheme words, and almost no words in compounds at all. In fact, nine groups show 100% insertions of single morpheme words (see Table 4-43).

This high percentage of single morpheme words consists largely of function words, noun markers, verb markers, phrase markers, and the like, usually inserted as the reader processes grammar and meaning. Some examples are these:

ER ...removed the shoes and <sup>I</sup> left them in the middle  
of the floor.

ER Then he <sup>had</sup> ran the wire up the sides of the two  
batteries.

ER It was enough to wake <sup>up</sup> the dead.

See the discussion of peripheral field miscues for more discussion of insertions.

Table 4-43

## Word Level Insertions and Omissions

Types of Insertions				Types of Omissions			
Group	1	2	6	Group	1	2	6
2L	-	100.0	-	2L	16.0	84.0	5.3
2LA	-	100.0	-	2LA	26.3	68.4	5.3
2HA	15.4	84.6	-	2HA	25.0	68.8	6.2
2H	6.7	93.3	-	2H	6.5	91.3	2.2
4L	-	100.0	-	4L	3.3	93.4	3.3
4A	16.7	83.3	-	4A	26.3	73.7	-
4H	-	100.0	-	4H	14.8	83.6	1.6
6L	-	100.0	-	6L	35.5	64.5	-
6A	5.0	95.0	-	6A	10.3	87.2	2.6
6H	4.0	96.0	-	6H	7.4	81.5	11.1
8L	-	100.0	-	8L	31.6	68.4	-
8A	-	100.0	-	8A	2.7	91.9	5.4
8H60	12.8	87.2	-	8H60	1.7	96.6	1.7
8H61	3.6	96.4	-	8H61	5.6	88.9	5.6
10L59	4.2	95.8	-	10L59	21.7	65.2	13.0
10LA60	-	100.0	-	10LA60	4.4	93.3	2.2
10HA60	-	88.2	11.8	10HA60	10.6	87.2	2.1
10H60	4.9	85.4	7.3	10H60	14.9	76.6	8.5
10L61	9.1	90.9	-	10L61	4.8	90.5	4.8
10LA61	-	100.0	-	10LA61	8.3	79.2	12.5
10HA61	7.4	88.9	3.7	10HA61	-	100.0	-
10H61	3.2	93.5	3.2	10H61	9.4	87.5	3.1

- 1 Multiple for multiple morpheme word  
 2 Single for single morpheme word  
 6 Compound word

The range of multiple morpheme word insertions is from 0% to 16.7% (4A), with 2HA (15.4%) and 8H60 (12.8%) also reaching high percentages.

The following is an example of a multiple morpheme word insertion:

OR  
 ER Then it stopped moving and now it's <sup>probably</sup> lying there in the warmth.

Insertions of words in compounds occur only within the tenth grade groups, though this may be partially a function of the text



material. It is interesting, however, that only the two highest tenth grade groups make this variety of miscues: 10HA60, - 11.8%; 10HA61, - 3.7%; 10H60, - 7.3%; 10H61, - 3.2%. Examples include the following:

OR campfires  
ER On nights when the fires were burning...

OR withdraw  
ER ...and together we began to draw back the sheet.

Word level omissions occur more frequently than insertions, though they are also limited to three types: omissions of single morpheme words, omissions of multiple morpheme words, and omissions of words in compounds. Table 4-43 shows the percentages of each which appear in this data.

As is true of insertions, single morpheme words are omitted most frequently. From 64.9% (6L) to 100% (10HA61) of all omissions are of single morpheme words. This is understandable since, especially among older readers, many of these are function words deleted in the processing of syntax and meaning. Younger readers, produce lower percents of these single morpheme word omissions in part because of the text materials they read. The stories read by younger readers contain fewer multiple morpheme words than the more difficult stories read by older students, and those multiple morpheme words which do appear are usually regularly formed plurals and regularly formed past tense verb forms.

OR ...for I am no longer (of) any use.

OR ...as she edged farther into the hollow so (that) the coyotes could not get behind her

OR ...we will look for the big (doll).

Omissions of multiple morpheme words are interestingly distributed among groups. In the sixth, eighth, and tenth-grades, the low proficiency groups show a far higher rate of multiple morpheme word omissions than average or proficient readers (6L, - 35.9%; 8L, - 31.6%; 10L59, - 21.7%). The high percentage among fourth graders appears, not among low readers, but among the average group (4A, - 26.3%). In the second grade, all but the high group have high percents (2L, - 16%; 2LA, - 26.3%; 2HA, - 29%).

OR I can help with little (things)

OR The first (priority)...

OR ...as if they were bonsai trees, (intentionally) kept in a precarious environment.

These younger readers and low proficiency groups make some omissions that are, in fact, deliberate. Younger readers encountering unfamiliar lexical items sometimes choose to omit rather than make an attempt; older inefficient readers may omit particularly difficult words, but often after one or more partial attempts. The older and the proficient reader's response to the same situation is frequently a non-word. Groups reading story 61 show between 19.7% (10H) and 32.4% (10L) non-words, as opposed to 2.4% (2L) and 4.3% (4L). Both 2L and 4L have high percents of omissions, however.

Omissions of words in compounds occur in all but five groups (2L, 4A, 6L, 8L, and 10HA61). Other group percentages range from 1.6% (4H) to 13% (10L59). The text is a partially controlling factor here, since compound words are not equally distributed among the reading selections. Examples of such omissions are the following:

OR He wouldn't be typical if he didn't cry sometimes

OR Somebody stuck some papers...

OR ...giving orders to lighting crews and cameramen.

Word level reversals do not appear frequently, in fact, two groups show no reversals whatsoever (2L, 2HA), and the highest percentage for any group is 4.2% (10H60) (see Table 4-38). The reader who makes a reversal at the word level must be operating at a level of language structure that is, in fact, beyond the word itself: he is processing phrasal units, at least.

OR "Mr. Barnaby will see you if you come over right away."

OR I mean I think just about everybody likes babies.

#### Phrase level

For the purposes of our research, it is necessary to define both phrase and clause levels very precisely. Not all grammarians would be in complete accord with the strict but pragmatic definitions we have established. In order to maintain accuracy and consistency in coding, however, some arbitrary lines have been drawn.

At the phrase level, we record any structural changes within three phrases: a noun phrase, a verb phrase, and an adverbial phrase which actually forms a part of the verb phrase. Appendix D contains specific examples of types of changes which may occur within these surface structure elements.

At the clause level, we record structural changes within independent, dependent, and embedded clauses. A clause is considered to consist of a noun phrase and a verb phrase within

the deep structure. Its surface representation, however, might consist of a single lexical item. Such is the case when the surface structure of a sentence includes an embedded noun modifier. We say that this noun modifier represents an entire clause.

Surface Structure:	My baby brother
Deep Structure:	The brother The brother is a baby The brother is mine

The omission of either noun modifier in this phrase represents the omission of a clause within the deep structure.

The involvement of larger syntactic units, such as phrases and clauses, varies among readers of differing grade levels and ranks. It is not only the percent of involvement which varies, but also the kinds of phenomena which occur and the frequency of these. In other words, both quantitative and qualitative characteristics distinguish miscues at the phrase and clause levels of the groups in this study.

The greatest amount of activity at the phrase level occurs in two groups, 2L and 4H. In the 2L group, 37.1% of all miscues are not involved at the phrase level. The next highest scores vary from these by more than ten percentage points (2HA, - 51.4%; 8A - 51.9%) (see Table 4-44). But this high percentage of involvement is not caused by the same phenomenon in the 2L and 4H readers. In the case of the 2L group, this high percentage of activity is due to a large number of phrase level omissions, more omissions than are produced by any other group, in fact (18.8%). In the case of the 4H group, the increased phrase level activity is not due to omissions but rather to a remarkable percentage of phrase substitutions (49.8%), again a percentage higher than that produced by any other group.

The omissions of the 2L group, reading stories 22 and 24, are unlike the phrase omissions occurring in older readers. Of the 2L omissions at the phrase level, 63% are also omissions at the word level. And these are not omissions of optional adverbial expressions or of repetitive and unnecessary pronouns. They are, with few exceptions, the omissions of noun phrases and verb phrases which are essential to the grammar and meaning of the text. Of these forty-five miscues, only nine are fully syntactically acceptable and ten are acceptable with prior portions of the text. Exactly half of the phrase omissions produced by these 2L readers result in lost or garbled deep structure (transformation 4).

- OR "Find the toys!" said the man.
- OR "I can help with little things."
- OR ..., "Jimmy" said to the man.

Table 4-44

## Phrase Level

Group	Not Involved	Substitution	Insertion	Omission	Reversal
2L	37.1	34.6	9.6	18.8	-
2LA	61.7	31.1	2.5	4.2	0.6
2HA	58.4	31.5	4.3	5.7	-
2H	51.4	30.6	6.7	10.2	1.2
4L	50.9	31.6	4.5	12.2	0.8
4A	55.5	32.0	4.7	7.6	0.3
4H	37.9	49.8	2.4	9.2	0.7
6L	63.4	23.7	2.9	9.9	0.2
6A	53.8	36.6	2.3	6.6	0.7
6H	63.2	25.2	4.2	7.1	0.4
8L	59.0	27.4	4.3	8.8	0.5
8A	51.9	39.4	3.4	4.8	0.5
8H60	50.8	31.2	6.1	11.2	0.7
8H61	58.5	35.9	1.5	3.7	0.4
10L59	67.4	25.4	2.4	4.3	0.5
10LA60	55.5	33.6	3.8	6.9	0.2
10HA60	52.5	36.0	4.3	6.9	0.3
10H60	55.9	33.5	2.8	5.5	2.4
10L61	69.0	23.6	2.9	4.1	0.4
10LA61	67.5	24.0	4.1	4.1	0.3
10HA61	58.1	35.7	2.3	3.9	-
10H61	58.8	34.2	4.0	3.0	-

The 8H group reading story 60 also shows an unusually high percentage of phrase level omissions (11.2%), third highest of all groups. These phrase omissions are of a higher quality than those of the 2L readers, however, and make an interesting contrast.

"Then how about whipping the sheet back quick and...

...thought it would go over the top of the sheet.

...speaking more slowly than ever now..

It is significant that though the 8H readers' percent of omissions is high for their reading on story 60, their percent of omissions for story 61 is the second lowest among all groups (3.7%). Likewise, phrase insertions made by this group are high for story 60 (6.1%) and low for story 61 (1.5%). It is apparent

that when the reading selection is more difficult, less prediction of the syntax takes place and greater attention is paid to word level accuracy, resulting in fewer phrase level miscues.

Although the 8H group shows the most contrasting percentages of omissions for the two stories 60 and 61 (11.2% and 3.7%), other groups display a similar pattern:

Table 4-45

Phrase Level Omissions in Groups  
Reading Stories 60 and 61

Group	Story 60	Story 61
8H	11.2	3.7
10LA	6.9	4.1
10HA	6.9	3.9
10H	5.5	3.0

Every group shows fewer phrase level omissions reading the more difficult article, just as every group shows less involvement generally at this level.

Table 4-46

Percent of Miscues Not Involved at Phrase Level in  
Stories 60 and 61

Group	Story 60	Story 61
8H	50.8	58.5
10LA	55.5	67.5
10HA	52.5	58.1
10H	55.9	58.8

The several factors which make story 60 easier to read than story 61 also permit miscues which affect larger units of syntax.

The 4H readers' extensive activity at the phrase level is not caused by omissions, however, but rather by substitutions. These are of many types. A change in tense is a frequent cause of phrase level substitution:

OR I'll call  
ER I called the local television station.

OR It will  
ER We could take some moving pictures of him...

OR  
ER But I remember the cameras <sup>moved</sup> moving close...

The insertion or omission of a determiner, or the substitution of a noun modifier or quantifier for or by a determiner, also results in a phrase substitution.

Might as well study <sup>the</sup> word meanings first.

"The typical baby."

OR  
ER There was a glassed in part along the whole side... <sup>one</sup>

OR  
ER "I want <sup>a</sup> sell my little brother."

The insertion or omission of a noun modifier brings about the replacement of one phrase for another.

"Philosophical," said my (baby) brother.

"Live, <sup>my</sup> boy, live!"

The above three types of miscues are responsible for most phrase substitutions among the 4H readers, however their proficiency is such that they are able to retain and utilize syntactic cues of a greater length and thereby produce phrase substitutions such as these:

OR  
ER I guess they do have <sup>some</sup> a soothing sound.

OR Everyone likes  
ER A baby like everyone else's baby.

OR  
ER Bring that fine boy over here <sup>right here.</sup> right away.

The least amount of activity at the phrase level occurs in three tenth grade groups: 10L61 (69% uninvolved), 10L59 (67.4% uninvolved), and 10LA61 (67.5% uninvolved). In each case, the percentage of phrase substitutions is lower than for most groups (23.6%, 25.4%, and 24% respectively) (see Table 4-44). Most

groups have phrase substitutions ranging from 30% to 40%.

Despite the reduction in quantity of substitutions among these 10L readers, the quality of their substitutions may nonetheless be compared with the 4H group just examined.

ER "There's nothing wrong with them that ten years, a

OR

won't

ER family, mortgage and car payments wouldn't be able to cure.

It is interesting that we see so much activity at this level of grammatical structure among the youngest readers of low proficiency, and so little activity among the oldest readers of low proficiency in our study. Actually, it represents a greater word accuracy among the older low readers. The tenth grade average and high readers make phrase level miscues to a greater extent than poorer readers of the same grade. This is because they, even more than the 4H pupils who show 49.8% substitutions, have effective control over the syntactic and semantic cues which permit them to anticipate the grammar and meaning of the text. They are not bound by single lexical items but rather process increasingly longer and more deeply embedded units of language.

Of the fourth, sixth and eighth grades as well, the low groups show the least amount of phrase level substitution, though the 4L and 4A scores are quite close. Readers in all of the low groups are much more bound to the word level than are readers in groups of average or high proficiency.

Within groups, however, the range of phrase level involvement may be quite wide. The 2LA group, for example, includes five students whose percentage of phrase level activity ranges from 44.8% to 81.3% uninvolved. The 2H group ranges from 30% to 80.3%. The 8A group shows a similarly wide variation: 40.7% to 80%.

Phrase level reversals do not occur frequently. Never do they exceed 2.4% (10H60) of the miscues at this level. The second highest percentage is 1.2% (2H), and the third highest .8% (4L). Four groups have no reversals at all (2L, 2HA, 10HA61, and 10H61) (see Table 4-44). This is, of course, partially due to our strict definition of a phrase level reversal: the phrase must be moved from one clause to another. Among the few examples made by the readers in our study is this one:

OR "I think the best thing to do is for me to...



## Clause level

There is considerably less activity at the clause level than at the phrase level. Where 37.1% to 69% of all miscues are not involved at the phrase level, 71.4% to 90.3% of all miscues are not involved at the clause level (see Table 4-47). It is interesting that the group with the greatest phrase level activity (2L, - 63%) also is the group with the greatest clause level activity (29%). Likewise, the group with the least phrase level activity (10L59, - 67.4%; 10L61, - 69%) also is the group with the least clause level activity (10L59, - 90.3%; 10L61, - 87.7%). There is a good reason for this. The phrase and clause levels are syntactically interrelated. Within the taxonomy, the omission of a noun modifier, for example, represents the omission of an embedded clause as well as the substitution of a noun phrase. The omission of an infinitive verb phrase is likewise the omission of an embedded clause. Since the 2L and 10L phrase level scores are so extreme, this syntactic relationship causes the clause level activity to be extreme as well, in spite of the fact that the range of clause involvement is much narrower.

The most important reason for the 10L readers' low involvement score is the very small percentage of clause level substitutions they make (1.7%). Only one other group (2LA, -.8%) has a lower percentage. Percent of clause substitutions seems to be linked to grade level and, at least among the oldest readers, to rank as well. For example, clause substitutions in the tenth grade groups increase as proficiency increases:

10L59, 1.7%; 10LA60, 5.3%; 10HA60, 7.4%; 10H60, 10.3%  
10L61, 3.7% 10LA61, 4.5%; 10HA61, 7.8%; 10H61, 9.7%

Within the eighth grade ranks, this relationship is less clear but still appears to be at work: 8L, - 4.5%; 8A, - 3.3%; 8H, - 7.5%.

The sixth-grade low and high groups have identical percentages of clause substitutions, with the 6A group producing the smaller score: 6L, - 4%, 6A, - 2.3%; 6H, - 4%.

In the second and fourth grades, the low groups have the greatest number of clause substitutions, the 2L group producing a percentage of substitutions as extreme as the 10L group at the opposite end of the scale (2L, - 13.2%). Just as the low percentages of substitutions is largely responsible for the low involvement score of the 10L groups, so the high percentage of substitutions in the same way is responsible for the high involvement score of the 2L readers.

The 2L clause substitutions are of three major types. One third of all their substitutions at this level are insertions or omissions of negatives in the verb phrase. These would also be coded as substitutions at the phrase level.



Table 4-47

Clause Level

Group	Not Involved	Substitution	Insertion	Omission	Dependency Change In Sentence	Dependency Change Between Sentence
2L	71.4	13.2	7.3	6.4	0.9	0.9
2LA	86.0	0.8	2.2	5.9	0.8	4.2
2HA	78.5	6.5	5.8	6.2	1.8	1.1
2H	76.9	5.6	4.0	5.6	4.8	3.2
4L	83.4	6.0	2.2	6.5	0.3	1.6
4A	84.2	3.7	3.7	4.2	2.4	1.8
4H	79.7	5.5	3.1	9.7	1.4	0.7
6L	82.5	4.0	4.5	7.0	0.7	1.3
6A	88.1	2.3	4.0	3.6	0.7	1.3
6H	80.0	4.0	5.0	4.6	2.7	3.7
8L	84.4	4.5	1.8	6.0	1.6	1.8
8A	81.3	3.3	4.1	6.3	2.2	2.7
8H60	81.4	7.5	4.0	4.0	1.9	1.2
8H61	87.6	4.9	1.5	4.5	1.5	-
10L59	90.3	1.7	1.4	5.6	0.6	0.5
10LA60	83.3	5.3	3.9	2.2	3.7	1.7
10HA60	81.3	7.4	1.3	4.6	3.3	2.1
10H60	78.2	10.3	2.4	2.8	3.2	3.2
10L61	87.7	3.7	3.3	4.7	0.6	-
10LA61	83.1	4.5	3.4	4.8	3.4	0.7
10HA61	80.0	7.8	3.9	5.5	2.7	-
10H61	84.1	8.7	1.5	2.6	2.6	0.5

OR look out  
 ER And my red train is not here.

OR My blue airplane: It is here  
 ER My blue airplane is not here.

The second major type of clause substitution involves imperatives, both inserted and omitted. Stories 22 and 24, read by the 2L group, contain these in abundance. The children produced these examples, among others:

We will look for the big doll.

OR Run to help Father.  
ER Freddie ran to help Father.

The third type of frequent clause substitution involves interrogatives. Sometimes word order is altered; occasionally a clear change in intonation indicates the miscue.

OR You see my little monkey  
ER Did you see my little monkey?

ER The monkey did it, too?  
OR The monkey had it, too.

The clause level involvement of the 2L group is high not only because of substitutions, but also because of insertions (7.3%), the highest percentage of insertions for any group. Likewise, the 10L59 clause level activity is slight not only due to the absence of substitutions, but also to the lack of insertions (1.4%), the second lowest percentage for any group.

The 2L clause level insertions consist almost entirely of two types: the insertion of a verb phrase, and the insertion of an embedded noun modifier. Frequently these are substituted for other words which do not have such grammatical importance:

OR ... said Little Kitten.  
ER ...the Little Kitten.

OR ...your little kitten.  
ER ...with little things.

Other examples include the following:

OR "See," the man said.  
ER "Sue," the man said.

OR You are to help.  
ER You are too little,

In spite of the fact that the low groups show such varying percentages of clause insertions, these scores do average to a percentage quite similar to the averages of other groups. The insertion scores of all low groups average to 3.4%. The insertion scores of all average groups have a mean of 3.6%. The insertion scores of all high groups average to 3.1%. Clearly, the means of readers of average and high proficiency are more indicative of particular group scores.

The clause level insertions of groups other than 2L are generally of the two types previously mentioned: insertions of verb phrases and insertions of embedded noun modifiers, both

representing clauses in the deep structure. Admittedly, different reading selections offer more or less opportunities for clause insertion, partly due to style and partly due to the amount of difficulty they pose for a reader. The 8H group produces 4% insertions while reading story 60, for example, and only 1.5% insertions on story 61. The two types of clause insertions, however, persist: insertions of verb phrases, and insertions of embedded noun modifiers.

OR                   to tell me  
ER You don't mean there's a...

...took a <sup>big</sup> piece

OR   and I thought  
ER ...as though he was...

OR                   my  
ER ...out of the room...

While low, average and high groups demonstrate roughly the same amount of clause insertions, this cannot be said of these groups with regard to clause omissions. The poorer readers produce more clause omissions (an average of 6%) than do the average or high readers (4.8% for each). The three groups with the least clause omission are all in the tenth grade: 10LA60, - 2.2%; 10H61, - 2.6%; and 10H60, - 2.8%. In general, the high readers make relatively few miscues resulting in clause omissions, with the notable exception of one group: 4H, - 9.7%. Their high percentage of clause omissions can be linked to a correspondingly high percentage of phrase substitutions: 5% of all miscues for this group involve substitution at the phrase level. The following are 4H miscues coded both as phrase substitutions and clause omissions:

OR "If it bothers you think of a baby sitting.  
ER "If it bothers you to think of it as baby sitting,"...

...in the room where your baby brother is sleeping...

Unlike phrases, which are always in some sense dependent upon other syntactic units either in the surface or deep structure, clauses may be either independent or dependent. They may stand alone or require another clause for the completion of the idea they begin. Changes in clause dependency, though not occurring as frequently as substitutions, omissions, and insertions, do take place. And they happen across sentence boundaries almost as often as they happen within a single sentence. Shifts in clause dependency usually require that the reader cope with lengthy units of syntax, something which most poorer readers fail to do. Hence we see fewer changes in clause dependency among low readers

than we do among more efficient readers. The second, sixth, and tenth grades offer considerable evidence of this:

Table 4-48

Changes in Clause Dependency Within the Sentence

Group		Group	
2L	0.9	10L59	0.6
2LA	0.8	10L61	0.6
2HA	1.8	10LA60	3.7
2H	4.8	10LA61	3.4
		10HA60	3.3
6L	0.7	10HA61	2.7
6A	0.7	10H60	3.2
6H	2.7	10H61	2.6

In most cases, when a clause changes dependency within a sentence, an unacceptable structure will result unless a correction or a later accommodation is made. The following sentence, the first sentence of story 59, caused several such miscues:

The rays of the setting sun <sup>lingering</sup> lingered over the high Arizona desert, touching the rocky tip of Badger Mountain and tinting the bold face of Antelope Rim.

Table 4-49

Changes in Clause Dependency Across Sentence Boundaries Among Readers of Two Stories

Group	Story 59/60	Story 61
8H	1.2	-
10L	0.5	-
10LA	1.7	0.7
10HA	2.1	-
10H	3.2	0.5

Shifts in clause dependency across sentence boundaries do not occur in three groups, all reading story 61: 8H, 10L, and 10HA. An examination of the selection suggests possible reasons. A sentence from the text sometimes coincides with as much as a paragraph. Sentences are long and syntactically very involved, usually consisting of at least one dependent clause in addition to the independent one. Some sentences are actually strings of dependent clauses. The result is that students reading two selections produced distinct percentages (see Table 4-49).

Four groups show more changes in clause dependency across sentence boundaries than any others: 2IA, - 4.2%; 6H, - 3.7%; 2H, - 3.2%; and 10H, - 3.2%. The relatively higher percentage of the 2IA group is due to miscues such as these:

OR All the family stood around him <sup>When</sup> when the  
prints were done, <sup>how</sup> How they laughed at  
some of the pictures.

OR "I know! I know!" <sup>Sue</sup> suddenly cried, <sup>Kitten</sup> Kitten...

Reversals of clauses, while still a theoretical possibility, do not appear in our study. A reversal at this level must be a reorganization of the existing constituents without any change in clause dependency.

#### Summary: Levels

More than one level of language process is involved in virtually every miscue, yet readers of varying ages and proficiency show different percentages of miscues at each level. Proficiency, rather than grade, seems to be the key to understanding readers' miscues here, as there is greater variation among low, average, and high readers than there is between younger and older readers. The primary reason for this seems to be that high readers of every grade, with the possible exception of the second grade, do a better job of predicting structure and meaning on the basis of selected cues. Low readers are less able to retain in memory long units of syntactic and semantic cues. They consequently do less predicting and are more tied to the word level and to other small units of structure and meaning.

The tenth grade groups are illustrative. The 10L group reading story 61 shows only 2.9% miscues not involved at the word level, whereas the 10H61 group shows 8% uninvolved. And just as word level involvement decreases with proficiency, so phrase and clause level activity increase. The 10L59 group shows 67.4% uninvolved at the phrase level and 90.3% at the clause level; the 10H60 group shows 55.9% uninvolved at the phrase level and 78.2% at the clause level.

With the single exception of the clause level, the most frequently occurring phenomenon is the substitution. Substitutions of sounds, bound morphemes, words, and phrases -- often caused by the same miscue -- gives support to the position that the reader must recreate the meaning which the author intended. The quality and the quantity of these substitutions, however, differ with the effectiveness and efficiency of the reader and, to a lesser extent, with the style of the reading material.

Likewise, omissions and insertions, particularly at the word level, vary according to proficiency. We find proficient readers of all grades making lower percentages of substitution, and higher percentages of insertions and omissions than do poorer readers. Average readers fall between these extreme scores.

A quantitative evaluation, however, does not provide a total picture, because the greater number of insertions and omissions of high readers involve function words and other minor transformations, whereas the insertions and omissions of the low readers frequently leave unacceptable structures.

#### PERIPHERAL FIELD

When a child reads, his eyes must stop and fix at points along the printed line in order for the graphic display to be in focus. At the point of fixation there is a small area of sharp focus surrounded by a larger area which is slightly out of focus but still seen. It is this surrounding area which we call the peripheral field.

If, as some people believe, reading involves the processing of print in an orderly sequence with words being processed one by one as the reader meets them on the line, then the peripheral field would have little effect on reading. Only an occasional miscue might appear from the peripheral field if the reader loses his place or his eyes wander in some random direction.

But reading is a sampling, selecting, predicting, comparing and confirming activity in which the reader selects a sample of useful graphic cues based on what he sees and what he expects to see. The graphic symbols are not processed one by one or in a strictly serial manner. Rather the reader samples from the print on the basis of predictions he has made as he seeks meaning. As a result, graphic information which is appropriate to the reader's prediction is sometimes pulled in from the peripheral field.

In these cases miscues may result. They are not a simple case of graphic information in the peripheral field causing the miscue. They are, like all miscues, products of the reading process. In searching for peripheral field miscues a match is made between the miscue (OR) and the same word (ER) in the same line or those lines above and below the miscue, if it exists.

In this section we look at the data from miscue analysis which indicates the effect that the peripheral field has on the reading process.

In examining the characteristics of the peripheral field we can illustrate the area of sharp focus as an elongated oval enclosing the part of the line the reader has in sharp focus during one of his eye fixations. Surrounding this oval we have hypothesized two other concentric ovals depicting the near and far parts of the peripheral field. Their relationships can be observed in the following figure.

Figure 4-8

#### Peripheral Field Model

"I've heard of him," said Betty.

They went into a large building  
and found Mr. Summers in his office.

"How do you do?" said Mr. Downs.

"Here are George and Betty Long.  
They would like to see your shop."

"You must be Frank Long's children,"  
said Mr. Summers. "How do you like  
your new home at River Farm?"

Ideally, we would search the area within those ovals for the source of the miscue from the peripheral field. But our computer program only permits us to search whole lines for the word in question. Therefore we have defined the peripheral field, for the purposes of this research, as being the graphic information contained in the same line as and on the two lines above and below the miscue in question. Three categories in the peripheral field have been established (see Figure 4-9).

The computer first searches the line on which the miscue is located. If an ER word is found on this line which is identical to the miscue than the miscue is listed as 3 and the search is terminated. If no appropriate ER word is found on



Figure 4-9

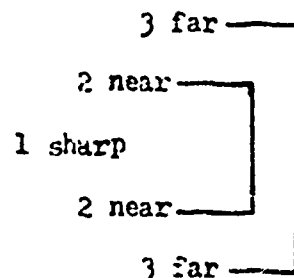
Peripheral Field Categories

looking at the stores and buildings.

When they came to the workshops,  
the busman let them off.

"Here we are," said Mr. Downs.

"Mr. Summers runs this shop.



the same line, the computer then searches the line on either side of the miscue. If an identical ER word is located on either of these two lines, the miscue is coded 2 in the peripheral field category. If no matching ER word is found on these two lines the computer moves out to a search of the next line on either side. When an ER word identical to the miscue is found here the miscue is coded as 1 in the peripheral field. If no matching ER word is found in these five lines then the miscue is considered not to be from the peripheral field.

The miscues which are potentially peripheral field miscues and for which no matching ER word is found in the five-line peripheral field are coded as 0.

Miscues which are considered as possible peripheral field miscues are those single word OR's that are insertions and substitutions. Excluded from such consideration are complex miscues, omissions, and miscues where the ER is graphically the same as the OR.

The following examples show miscues which are found in the peripheral field:

They  
"What are they?" asked Sue,...

...many of our parents are as trou-  
bled as we are. They know reck-  
less leaders...

said Mrs. Duck.  
Said  
"My new hat is at the house.



At supper he was careful not to speak of the secret.  
Once, however, he forgot himself; he looked at the butter.

man." I sat in a large leather chair in front of him. "I'm  
a very busy man," he said, hanging up the two telephones  
in into which he'd been talking. "My time is very valuable...

The way he was speaking reminded  
me of George Barling after he got shot  
in the stomach when he stood leaning...

I held my finger breath.

He wagged a finger at Andrew and said...

#### Search Procedure Limitations

Certain limitations are evident in the foregoing search procedure. Ideally, we would consider the identical ER word that is physically closest to the miscue to be a contributing factor to the miscue rather than an ER word at a greater distance from it. The closest ER word is sometimes found on the line immediately above or below the miscue. However, an ER word on the same line as the miscue which is relatively much farther away than the ER word directly above or below will be picked up first in our search procedure and the miscue will be labelled category 3 instead of category 2. Such a possibility can be seen in the following examples:

...standing on a rock in the rose garden.

"It's the best picture I ever saw!"

...back upstairs. Pulling the kitchen stepladder out into the  
hall and climbing up on it, he found the transom...

This latter example is actually fortunate because the closest match for the OR is in the very close periphery. But a word just above or below will normally be coded category 2.

The computer also fails to locate certain miscues from the peripheral field when the miscue is an inflection or other variation of an ER in close proximity to the miscue. Notice this miscue:

OR  
ER ...and carefully <sup>pieced</sup> placed the pieces of glass inside.

It is quite possible, that due to the nature of the sampling and predicting process, the reader sees the word "pieces" and adapts it to fit the verb slot. Since our computer program cannot locate these types of relationships, they are not dealt with in this research. Thus the findings to be reported here are a somewhat conservative indication of the effect of peripheral field on reading.

#### Which Part of the Field is Most Influential?

When peripheral field miscues are examined by category for ability level and grade level, similar findings are evident. The percent of category 2 miscues is about double the percent of either category 1 or category 3 miscues. For individual groups the ratios vary but category 2 is always the highest percent. Since two lines are searched for category 2 miscues and only one line is searched for category 3 miscues, category 2 (lines on either side of the line on which the PF miscue occurs) is at least as influential a source for PF miscues as is the same line (category 3) on which the miscue occurs. See Table 4-50 for grade level results.

Category 1 miscues come from one of the lines which are two lines away from the miscue. The percent of category 1 miscues is approximately equal to the percent of category 3 miscues for each group, suggesting that category 1 lines are approximately half as influential as a source of PF miscues as is either category 2 or 3.

Both category 2 and category 1 may be more influential than the percents for these categories suggest. If the ER match for the miscue is found in category 3, then category 2 lines are not searched. A similar reduction in percent for category 1 may be caused by the computer picking up an ER match in category 2 first.

Considering this possibility the influence of the close peripheral field (1 line above and below) is impressive indeed.

A manual search of peripheral field miscues in story 53 resulted in a few examples being found of matches in category 2 being closer to the miscue than the one recorded in category 3. Only one or two were found in category 1 which were recorded as category 2.

To get some indication of the relative influence of the higher and lower lines in categories 2 and 1, a manual count of the location of the ER match for the miscue was made for each subject reading story 53. In category 2 the ER match for the

Table 4-50

Percent of Peripheral Field Miscues by Categories

Group	0	1	2	3	Mean
2L22/24	73.3	5.6	17.8	3.3	
2LA44	77.4	8.5	10.2	3.9	
2HA47	76.4	4.6	9.7	9.3	
2H51	71.9	8.4	10.7	9.0	
Mean	74.7	6.8	12.1	6.4	25.3
4L26/28	83.9	6.1	7.7	2.3	
4A51	82.7	5.7	6.5	5.1	
4H53	74.6	3.9	14.1	7.3	
Mean	80.4	5.3	9.4	4.9	19.6
6L47	85.9	3.1	5.8	5.2	
6A53	75.9	5.1	11.9	7.1	
6H59	78.2	5.8	10.8	5.3	
Mean	80.0	4.6	9.5	5.9	20.0
8L53	77.2	4.1	11.3	7.4	
8A59	74.6	6.7	9.7	9.0	
8H60	67.5	8.0	14.3	10.2	
8H61	81.2	3.3	12.2	3.3	
Mean	75.0	5.5	11.9	7.6	25.0
10L59	89.4	2.3	5.2	3.1	
10L61	90.4	2.8	4.1	2.6	
10LA60	77.0	5.2	12.6	5.2	
10LA61	87.1	3.5	7.1	2.4	
10HA60	71.4	7.8	12.3	8.4	
10HA61	81.0	5.6	9.1	4.3	
10H60	66.1	7.0	17.2	9.7	
10H61	82.1	2.5	13.0	2.5	
Mean	80.5	4.6	10.1	4.8	19.5

miscue was found 131 times on the line above and 90 times on the line below. For category 1 the ER match occurred 54 times on the second line below. For category 1 the ER match occurred 54 times on the second line above and 42 times on the second line below.

Since we would expect an equal number of occurrences above the line as below the line in both categories 1 and 2, there must be some other factor operating. Memory is perhaps one influence which increases the occurrences of PF miscues above the line. In category 2 the number of occurrences above the line is approximately 50% more than the occurrences below the line. Thus, memory may be quite influential in category 2 miscues. Since there is only about 30% more occurrences in the line above for category 1 than for the line below, memory would be less involved for the more

remote line.

We would expect this latter finding since material processed later (in category 2) would tend to remove and/or interfere with material processed earlier (category 1).

Alternative explanations are that the visual data in the upper part of peripheral field receives more attention from the reader or that some combination of short term memory plus attention is at work.

For subsequent discussion, the three categories (1, 2, 3) of peripheral field miscues are grouped together and are compared with those miscues which are potential peripheral field miscues but turn out not to be (marked as category 0).

#### Trends in Percent and Frequency

There is a general tendency for the percent of peripheral field miscues to increase with ability level within each grade. The 2L and 4L groups are the only exceptions.

The mean percent of peripheral field miscues (1 - 3) for all groups in ability levels increases. The mean percent of miscues for the low groups is 16.7%; for the average groups it is 21.8%, and for the high groups it is 25.5%. This finding suggests that, generally, as reading proficiency increases the involvement of the peripheral field as a contributing factor to miscues becomes greater. In other words, the more proficient the reader at any grade level (with the exceptions noted above), the more chance there is that the peripheral field will be a factor in miscues.

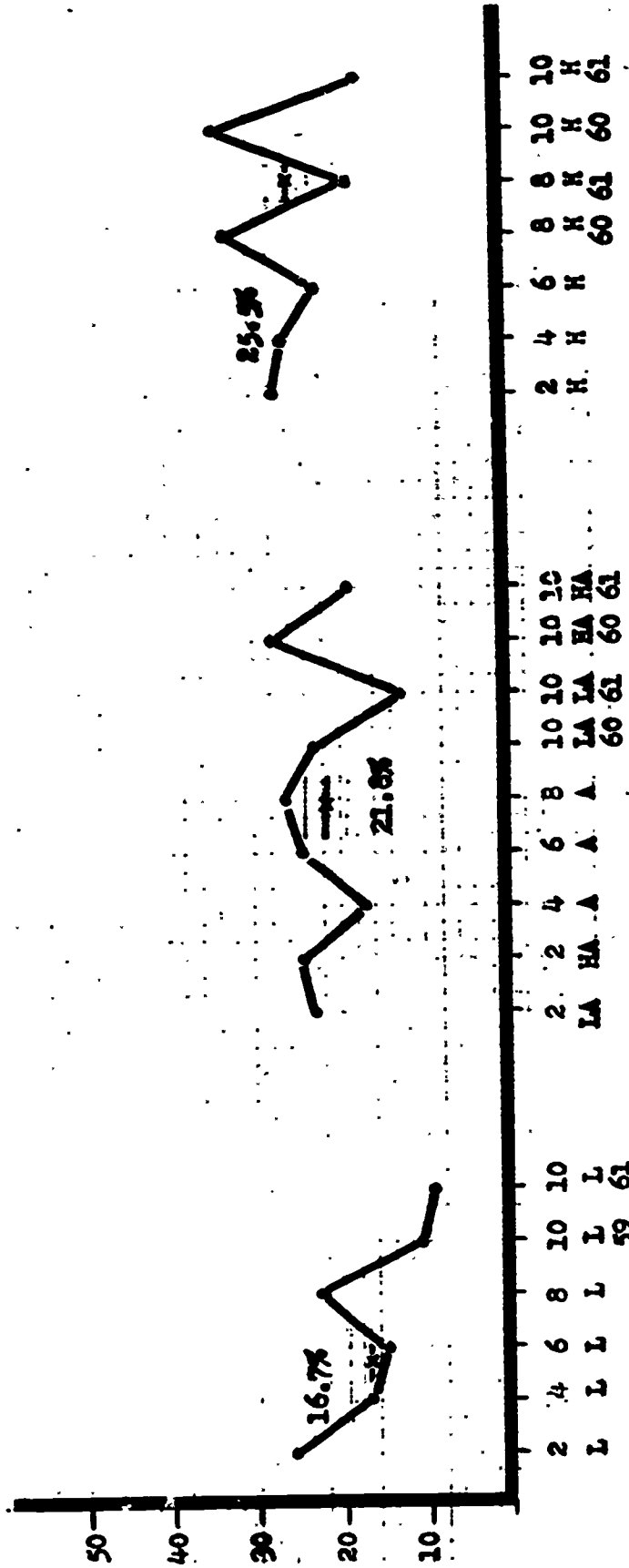
The mean involvement of peripheral field miscues is almost equal for the fourth (19.6%), sixth (20%), and tenth-grades (19.5%). The mean involvement of peripheral field for the second grade (25.3%) nearly equals that of the eighth grade (25%) (see Table 4-50).

When peripheral field involvement is considered for the same groups reading two stories, the mean percent of peripheral field miscues (1 - 3) is lower for the more difficult story in each instance. This finding suggests that as story difficulty increases readers may be more cautious in their sampling and predicting thereby reducing, relatively, some of the peripheral field effect.

When we examine the effect of peripheral field on the three ability levels (L, A, H) as shown in Figure 4-10, it is evident that the percent of peripheral field miscues steadily decreases for the low groups as we move up through the grades. The 8L group is the sole exception.

The story read by the 8L group (53, My Brother is a Genius) apparently has characteristics which make peripheral field effects

Figure 4-10  
Peripheral Field Miscues By Ability Levels



likely, since the 6A and 4H groups who read the story had similarly high levels of peripheral field miscues.

For the High groups there is also a steady drop in the involvement of peripheral field miscues if only the more difficult story is considered for those groups reading more than one story. There is a considerably higher percent of miscues involving the peripheral field when High groups read the easier story.

The Average groups exhibit no clear trend. However, there are two groups (4A, 10LA61) which have much lower peripheral field involvement than the rest.

The above findings on peripheral field miscues show that the percent of peripheral field miscues changes little in its mean effect across grades but tends to increase by ability level within grades. However, MPH<sub>W</sub> decreases with increases in grade and ability level and the peripheral field can only influence substitutions and insertions at the word level, not all miscues. What really happens to frequency of peripheral field miscues as grade and ability level change?

#### Peripheral Field Miscues Per Hundred Words (PFMPHW)

The percent of peripheral field involvement outlined above gives us the relative influence of the peripheral field as ability level and/or grade level change. What these findings do not tell us is what happens to the actual frequency of peripheral field miscues as grade and/or ability levels change. To find the actual frequency of peripheral field involvement we must multiply the percent of peripheral field miscues (%PFM) by the miscues per hundred words (MPHW). The result is the peripheral field miscues per hundred words (PFMPHW).

$$\%PFM \times MPH_W = PFMPHW$$

Figure 4-11 displays the percent of peripheral field involvement by grade level in the top half of the figure and the actual frequency of peripheral field miscues (PFMPHW) in the bottom half. In all but two cases (10L61 and 10HA61) the actual frequency of peripheral field miscues decreases as grade level and ability level increase. Even though the relative effect of the peripheral field increases with ability level, the actual frequency of peripheral field miscues decreases, which shows that other factors affecting miscues drop out sooner than the effect of the peripheral field.

For example, if we examine the fourth grade groups in Table 4-51 we notice that MPH<sub>W</sub> drops considerably as we move from low to high. However the percent of peripheral field miscues increases.



Table 4-51

## Peripheral Field Miscues and MPHW of Fourth Grade

Group	MPHW	PFM	PFMPHW
4L	12.45	16.1	2.00
4A	8.61	17.3	1.49
4H	3.63	25.3	.92

For the low group which has 12.45 miscues per hundred words, 16.1% of those 12.45 miscues (or 2.00 miscues) are miscues from the peripheral field. Whereas for the high group there are only 3.63 miscues per hundred words but 25.3% of those (or .92) are miscues from the peripheral field. Even though the percent of PF miscues increases (16.1% - 25.3%) the actual frequency of PF miscues decreases (2.00 - .92). Similar findings exist for all groups.

## Substitutions and Insertions

Peripheral field miscues consist of only word level substitutions and insertions which are found within the defined boundaries of the peripheral field as described in the introduction of this section. The relationship of these substitutions and insertions will now be considered.

Figure 4-12 indicates that as we move up the grades the percent of related substitutions tends to decrease and the percent of related insertions tends to increase. Except in the 2L group a much higher percent of insertion miscues are found in the peripheral field than substitution miscues. As a result, the ratio of insertions to substitutions increases with rising grade and ability level, with the exception of the 10HA and 10H groups, where the ratio decreases.

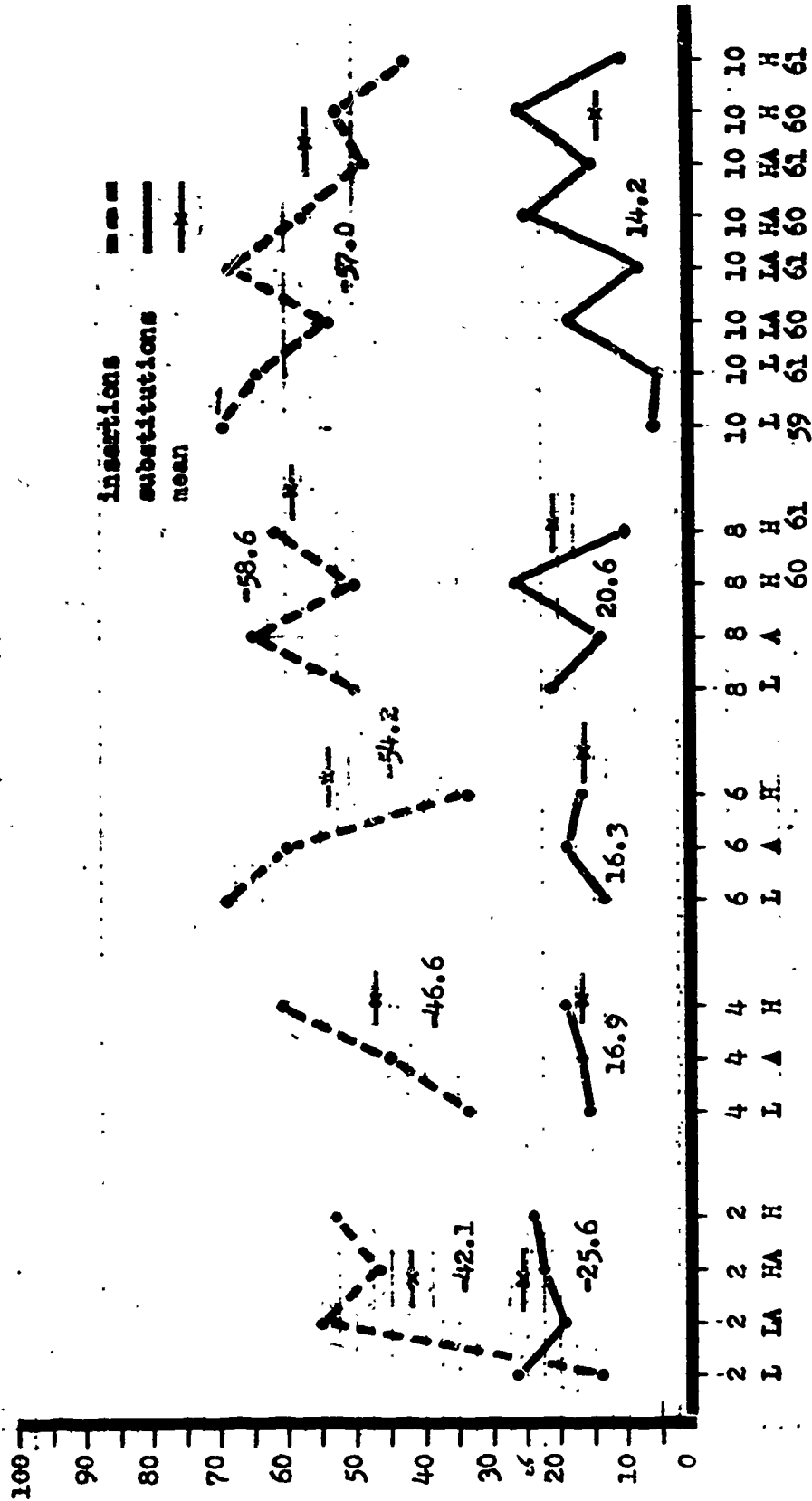
The above observations lead to the conclusion that, generally speaking, as grade level and/or ability level increase the peripheral field plays a greater role as a source of insertion miscues. A contrary effect, i.e. a decreasing role, is noted for the peripheral field in regard to substitution miscues.

For example the fourth grade groups display increasing involvement of the peripheral field in their insertion miscues as we move from the Low, to Average, to High ability groups: 33.3%, 45.5%, and 60.9% respectively. The mean percent of insertion miscues which are found in the peripheral field increases over the grade levels as follows:



Figure 4-12

Peripheral Field Influence: Substitutions and Insertions



2nd Grade	42.1%	8th Grade	58.6%
4th Grade	46.6%	10th Grade	57.0%
6th Grade	54.2%		

An exception to the foregoing trend for insertions is the sixth grade groups which show exactly the opposite findings. As the reading ability level increases the percent of insertion miscues from the peripheral field decreases (see Figure 4-12).

The mean percent of substitutions from the peripheral field decreases steadily through the increasing grade levels, except for the eighth grade, as follows:

2nd Grade	25.6%	8th Grade	20.6%
4th Grade	16.9%	10th Grade	14.2%
6th Grade	16.3%		

But these changes in substitution miscues and insertion miscues are all relative as were the percent of peripheral field miscues discussed earlier. Since the actual number of MPHW decreases with increasing ability and grade level the actual frequency of insertions and substitutions from the peripheral field decreases too. However, their decrease, compared to the drop of other factors affecting miscues, is slower. In other words the influence of the peripheral field on substitution miscues diminishes more rapidly than its influence on insertion miscues but the PF effect on both insertions and substitutions continues throughout the grades to affect miscues more than some other factors which have a faster decline in their influence on miscues.

Another phenomenon evident in the data is the striking difference in the percentage of insertions and substitutions from the peripheral field when one group reads two stories of varying difficulty. In the majority of instances, the more difficult story gives rise to a decreased percentage of insertion and substitution miscues from the peripheral field.

For example, when the 10L group reads story 59, 69.2% of the insertions and 6.2% of the substitutions are found in the peripheral field, whereas, when story 61 is read, only 64.3% of insertions and 5.5% of the substitutions are found in the peripheral field. We are led to conclude that the increased difficulty of the story being read decreases the effect of the peripheral field on the reader. A further discussion of this phenomenon appears when we deal with function words.

#### Function Words

If a certain word or group of words appears in a story many times relative to other words or groups of words, we would expect them to also form a higher proportion of PF miscues since there is a greater chance of these words being in the peripheral field.

For example, if 2% of the words in a story are nouns we might expect 2% of peripheral field miscues to be nouns by chance. If the proportion of nouns is significantly more or less than 2% then we view such a divergency as a factor which needs to be explained. Since function words are few in number but very frequently used, it is important to consider function words versus non-function words in the peripheral field.

The percent of ER function words in each story rises gradually from 27% in stories 22 and 24 to 38.6% in story 61 as shown in Figure 4-13. But the percent of function word miscues in the PF in each story increases dramatically from 22% in combined stories 22 and 24 to 86.5% in story 61. (Non-function words in the PF plus function words in the peripheral field equals 100% of the miscues in the peripheral field.) Three peaks are also noted in stories 47, 59 and 61.

What factors affect this notable rise in function word miscues over non-function word miscues from the peripheral field?

There are three factors which should be examined: The relative proficiency of the readers, the author's style of writing, and the difficulty of the story. These are explored as they affect results in stories 47, 59 and 61.

In story 47 both groups 2HA and 6L contribute similarly (54%, 46% respectively) to the total number of function word miscues from the peripheral field.

However, in story 59, which is read by 6H, 8A and 10L groups, a far different picture is evident. The 8A group accounts for 56.6% of the function word miscues while the other two groups (6H, 10L) together account for the remaining 43.4%.

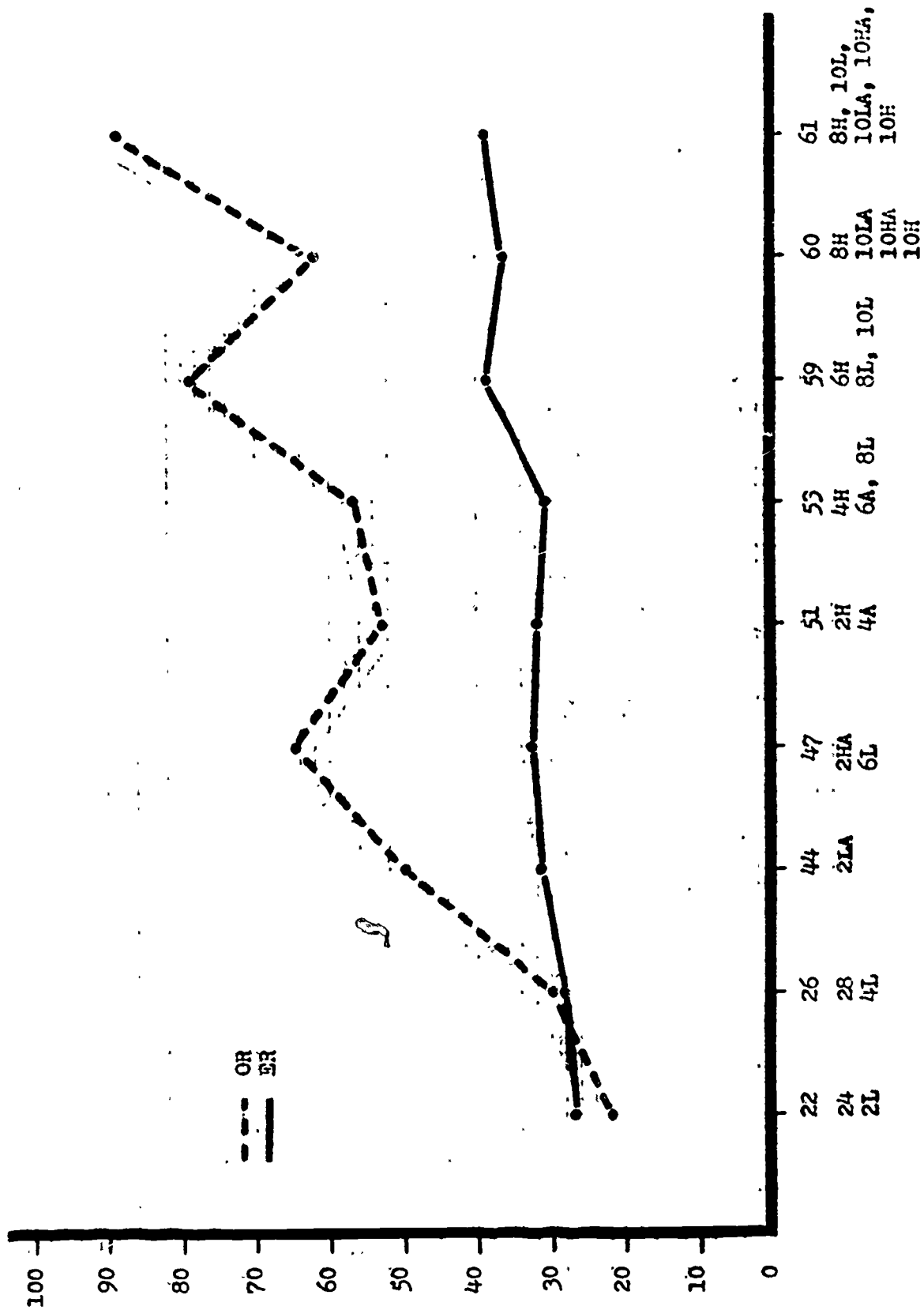
In story 61 there is an even distribution of function word miscues from the peripheral field among the five groups (8H, 10L, 10LA, 10HA, 10H) who read the story.

In story 59 the 8A group has two individuals in it who insert and substitute more function words from the peripheral field than do any others. Subjects 226 and 228 show a high propensity for inserting noun markers, specifically "the". In story 59, 2% of the ER function words are "the", but these two subjects insert "the" 34% and 41% respectively.

The reason for high proportions of function word miscues from the peripheral field in stories 47 and 61 must be sought elsewhere than primarily with the readers since no specific group stands out as atypical. Therefore, something in the story itself should be considered. There may well be some characteristic of the author's style which contributes to the higher rate of function word miscues in these two stories. For example, the author may omit at the surface level certain function words which are present

Figure 4-13

Percent of ER Function Words in Stories and  
Percent of OR Function Word Miscues From Peripheral Field



at the deep structure level. Such a situation encourages the insertion of such function words in the surface structure. In fact, high levels of peripheral field insertions are evident (see Figure 4-13) for many of the groups reading these two stories (2HA, 6L, 10L, 10LA).

The following examples show the insertion of a function word which is present at the deep structure level of the ER but not at the surface level.

Subject 249

Poison

At that moment we

both thought <sup>that</sup>  
                  ^ he had been bitten and...

Subject 256

Generation Gap

...where

                  the  
a lucky few can climb into ^ lifeboats and survive...

A review of previous findings in this study raises an additional important factor regarding the difficulty of the stories. In story 61 there is a great spread between syntactic acceptability and semantic acceptability (28.4% spread as opposed to a mean of 19.5% for all groups). In other words, the readers of story 61 are much more able to handle the syntax which, in large part, is signalled by the function words than they are to handle the meaning. It is reasonable to conclude that there will be more function word miscues as the readers manipulate deep structure and produce minor surface changes of function words. In this context it is relatively easy to see why function words in the peripheral field get picked up as the sentence structure is predicted and why non-function words (mostly content words) are not picked up. The 86.5% of function word miscues from the peripheral field (Figure 4-14) supports the hypothesis arising out of this great spread between syntactic and semantic acceptability.

In stories 47 and 59 there are also greater-than-average spreads between syntactic and semantic acceptability (story 47, - 24%; story 59, - 23.5%). The readers of these two stories have the same reasons for making a high proportion of function word miscues from the peripheral field as contrasted with non-function word miscues.

To summarize, the high percent of function word miscues from the peripheral field in stories 47, 59 and 61 and to a lesser extent in the other stories, may be attributed to idiosyncracies of individual readers (eg. 226 and 238), and to characteristics of the stories, that is, the optional omission of function words

at the surface level by the author that are present at the deep structure level, and the difficulty of the story itself which causes readers to utilize the peripheral field primarily at the points where they can handle the syntax and semantics - mainly the function words.

With very frequent function words such as "the" it is also possible for the insertion phenomenon to operate quite independently of the peripheral field with "the" occurring in the peripheral by chance. If a word like "the" is as much as 10% of the running text then the possibility of occurrence in a five line sequence is quite high.

Still it appears clear that the graphic display in the peripheral field has a much greater effect on insertions than on substitutions.

#### Individual Comparisons

When he reads, each child performs differently than every other child. Sometimes, though, there are comparisons that can be made between children when we consider their total performance or one aspect of that total performance. This section will compare a few of the characteristics of individuals as they utilize the peripheral field in their reading.

Subjects 211, 234, 235 and 236 are examples of children who make low percents of peripheral field miscues (of the total potential miscues in the peripheral field). Subject 211 is in the 4H group. The others are low tenth graders.

Subject 234 often inserts the noun marker the in the surface structure. Usually this noun marker exists in the deep structure but not in the surface structure. The is also substituted for other noun markers by this subject. As might be expected, the substitution of two and three letter words is frequent. Some of these substitutions are pronouns which change number and/or person. Some examples follow:

...made her sniff hopefully under <sup>the</sup> rocky ledges...

...food only made her hunger worse,...

...savagely for its throat.

Subject 235 also substitutes a number of two and three letter words. In addition, there are insertions of a and the and the substitution of the for other noun markers, including a. Function words beginning with th- are substituted for other th- function words or th- pronouns in the peripheral field. Some examples follow:

...and our forthcoming children...

For if <sup>in</sup> my generation...

...many of us who began...

...and this time the thrust came...

The peripheral field miscues of subject 236 are similar to the foregoing two. These subjects' peripheral miscues could be examples of chance occurrence of function words in the periphery.

Subject 211 has a group of peripheral field miscues associated with the topic of the paragraph in which they occur. Other peripheral field miscues in the immediately surrounding paragraphs appear to stem from the author's use of relatively uncommon structures. Some examples:

Carefully he taped the <sup>battery</sup> batteries end to end...

...ran the wire up the sides of the <sup>(c)</sup> ~~two~~ <sup>battery</sup> batteries

to the bulb. After winding the wire around the

<sup>battery</sup> bottom of the bulb,...

...so it touched the cap on the top battery.

Subjects who make fairly high percents of peripheral field miscues are exemplified by subjects 218, 226 and 251. Subject 251 is a 10H reader. He makes peripheral field miscues that do not change the function of the ER word. His actual number of peripheral field miscues is low because his MPHW is low. Some examples follow:

...I put my mouth almost <sup>to</sup> on his ear...

The beam of a <sup>the</sup> headlamp shone...

...he <sup>asked</sup> answered...

Subject 218 in group 6A also shows no change in function for his peripheral field substitutions but some of his insertions

do cause change in function between OR and ER. For example:

I think you may have <sup>l</sup>hit on a gold mine...

This subject has a very low MPHW and is the only subject to achieve residual MPHW of 0.0%.

One of the most atypical and patterned examples of peripheral field involvement is evident in the miscues of subject 226, an 8A reader. Of fifty-two peripheral field miscues, sixteen are insertions of the, fourteen are insertions of and, and some of the remaining twenty-two are substitutions of the and and for each other. Note the following examples:

...and built fires on <sup>the</sup>high points...

The Herder and <sup>the</sup>dog stopped...

...at his throat, <sup>and a</sup>the tendon abcrn...

And When it became quiet...

On the other hand, subject 251 shows little pattern except for the more limited insertion of the and and.

Other subjects show different patterns in their peripheral field miscues.

Subject 167, an 8L reader, displays initial and final graphic similarities in his peripheral field miscues. Approximately half of the miscues change function. There is some substitution of pronouns involving number and person. For example:

As the lady led me... <sup>him</sup>

He We could put it...

A As little brothers go...

...of things <sup>baby</sup>babies use.

...be better <sup>now</sup>not to have a contest.

...came to the house. <sup>our</sup>



Subject 191, a 6L reader, makes peripheral field miscues which have graphic similarity with the initial part of the ER. Most miscues change their function.

to  
Billy liked the winter, too.

his was then  
...he and the farm would race together through...

their  
...house was done, they built one for...

the for of  
At this season of the year all the...

With subject 216, a 4A reader, initial graphic similarity with the ER is also notable for peripheral field miscues. Subject 222, a 6A reader, shares some of the foregoing characteristics with initial and final graphic similarity, limited change in function of the OR, and limited insertions of and and the.

the  
Later that day Mrs. Miller...

was  
I thought the refrigerator would explode.

could  
...my idea would be for you to choose...

When we examine the extent to which the peripheral field miscues are semantically acceptable, a pattern does emerge for the three groups. Those individuals (members of the average and high ability groups in their grade) who make relatively high percents of peripheral field miscues have the highest proportion of such miscues acceptable in the sentence or whole text. Those subjects from average and low ability groups who make an average number of peripheral field miscues have a higher proportion of those miscues which are only partially acceptable or not acceptable at all. The subjects (from average and low ability groups) who make the lowest percentage of peripheral field miscues are those who show high proportions of unacceptable or only partially acceptable miscues.

#### Summary

All readers produce observed responses which match words graphically in the visual peripheral field. Readers in higher grades and groups of higher proficiency in the same grades tend to show a higher percentage of such miscues. However, because MPH drops with greater proficiency the actual frequency of peripheral field miscues declines at the same time that percentage

increases.

This seems to show that the tendency to be influenced by the graphic display in the visual peripheral field remains relatively constant as proficiency increases, while other factors contributing to miscues diminish so that this factor emerges as a more significant contributor to miscues. This becomes evident when upper grade readers of two stories show more peripheral field miscues in the easier story.

Insertions are very likely to be influenced by peripheral graphic cues, much more so than substitutions. This is increasingly true as proficiency increases. These insertions are very largely composed of function words which are often optional elements in the deep structure.

Function word miscues are much more likely to involve the peripheral field than non-function words. Our study does not differentiate the extent to which this is coincidence due to the frequency of occurrence of function words or a tendency to pull function words in because of predictions of structures in which they may fit. In essence, less proficient readers do tend to produce miscues where the peripheral field word has a graphic resemblance to the ER word.

We can conclude that the influence of cues in the visual peripheral field is not a random one. Words are not likely to be pulled in from the peripheral field unless they fit in some ways with the semantic, syntactic, and graphic cues the reader is processing and the predictions he is making.

#### A Closely Related Phenomenon: Duplicate Words

At times miscues appear to result from the same word shape appearing two or more times in a close sequence. The reader apparently becomes confused about whether or not he has already processed a word when he sees it a second time. This often results in an omission, so it would not show in the peripheral field data.

To study this phenomenon we analysed fifteen such items in a single story, *Poison*, (story 60). Since twenty-one readers read this story there are 315 possible opportunities for miscues in these fifteen instances. Forty-three miscues are produced, which is about 14% of the possible number. Since the MFHW for all readers of this story is only 3.36%, this rate seems higher than expected.

The most common miscue, as expected, is the omission of the second occurrence of an item. Five readers omit the second to in the following example:

...to move or to...



form as there are changes in the opposite direction. One explanation for this might be that these less experienced readers have already become sensitive to the differences between written and spoken language (particularly in their encounters with the often unnatural language of primers), and they consequently are led to expect full form in print.

The substitution of both full and contracted forms occurs more frequently among the older readers than among the younger ones, as do all types of allologs, in fact. Because five groups of these older students read two selections, however, we again have an opportunity to see what influence a text may have upon a particular type of miscue. The allolog miscues involving contractions vary greatly between the magazine article story 61 and the two short stories 59 (10L) and 60 (8H, 10LA, 10HA, 10H). Reading stories 59 and 60, eighth and tenth-graders move from a contraction to a full form eighteen times, and on nineteen occasions from a full form to a contraction. The same students reading story 61 shift to a full form again in eighteen different miscues, but produce contractions only five times. The sophisticated complexity of the article is probably responsible for the greatly reduced number of contractions. The suspenseful plots, and more conversational language of both short stories make it possible for more contractions to occur.

Though the majority of allolog miscues consist of contraction and full form substitutions, an extremely large number of allologs of a second type are produced. Sixty of 151 allolog miscues are "long" and "short" forms of a lexical item, such as the airplane-plane example previously mentioned. This category normally includes alternate possibilities within the dialect of the reader:

OR until  
ER till

but may also include alternate possibilities within the idiolect of the reader:

OR \$frigerator OR \$cept OR \$Lizabeth  
ER refigerator ER except ER Elizabeth

A. These long and short forms are of several types. Proper names and their diminutives are frequently interchanged:

OR Fred OR Bill OR Kitty  
ER Freddie ER Billy ER Kitten

B. A second type includes compound words and their alternatives:

OR plane OR driveway  
ER airplane ER drive



but surely this can be said in particular of those allologs which involve idiomatic expressions.

**Summary: Allologs**

The phenomenon of allologs occurs much more often among the older readers, the eighth and tenth graders, than among the younger ones. The more experienced students have developed more alternative ways of expressing ideas, especially the idiomatic ways which the second, fourth, and sixth graders seldom utilize.

Younger readers often substitute variant forms of proper names, such as Tom and Tommy, for each other. This is true in part because the texts make extensive use of such items and hence provide the opportunity for this type of miscue. But, it is also true because children in the primary grades have accumulated by this time a large repertoire of alternative names for particular persons and things, and intuitively sense the acceptability of either alternative in the selections they read. Their apparent satisfaction with such miscues may be seen as a strength.

Finally, the reading selection may influence the degree of allolog activity, as the two texts story 60 and story 61 illustrate. Encountering an unfamiliar dialect (story 60), readers produce the allologs of their own preferences: the meanings remain the same, but the observed response is a native American preference, as opposed to the British English of the author. The complex style of the magazine article (story 61), furthermore, seemed to cause pupils to operate less freely, and allolog miscues were consequently reduced in number.

## Chapter 5

### RESULTS: PART 3

#### Readers at Increasing Levels of Proficiency

In this chapter we shift our focus from phenomena across readers at varying levels of proficiency to the readers themselves. Here we present a depth picture of each group of readers in each grade at each level of proficiency from low second graders to high tenth graders. Our goal is to see the acquisition of the reading process in the perspective of its use at each level of functioning.

We begin with the least proficient group, the 2L, and move upward. To facilitate comparison, we have several groups at comparable levels of proficiency reading the same story. Comparisons of groups reading each story are interspersed in the sequence in this chapter before the groups that read the selection are discussed, after these comparisons, the groups are presented from the least proficient to the most proficient.

#### Low Proficiency Second Graders: 2L

How does a reader look after one and a half to two years instruction if he has made relatively little progress? That's the view we present here as we look at five low proficiency readers in second grade.

The 2L group, like the three other second grade groups, is composed of five children. Three are Black males, one is a White male, and one is a Black female. The 2L group read two stories, both from pre-primers. Two selections were used in this case, because of their brevity. For the purposes of analysis, they were treated as a single selection. The two selections are Little Monkey and Little Freddie.

The language of both stories is somewhat unnatural, with rather weak syntax, though in each selection there is a definite story line. The following example is from Little Freddie:

Jack said, "You cannot help me.  
You are too little."

Little Monkey concerns a search for a lost monkey. Its conclusion shows pictorially where the lost monkey has been hiding but does not mention it in the text.

The 2L readers show a strong tendency to omit, intentionally,



words that are unfamiliar to them. Sometimes these words are consistently omitted throughout the story each time they appear; at other times readers do make attempts on subsequent occurrences. Such omissions frequently result in a total loss of syntax and meaning:

"Is my little monkey here?"

Can  
And he had the blue airplane.

"Yes, yes," laughed the man.

"Look up here," said Jimmy.

This strong tendency of the 2L group to omit unfamiliar words contrasts strikingly with the tendency of both more experienced and more proficient readers to substitute another word for the unknown one. The quality of these substitutions varies according to the effectiveness of the reader, and the number of his attempts in any given instance varies according to his efficiency. Deliberate omissions, however, are very rare, even among low readers in higher grades.

Subjects in this group vary, however, in how consistently they use word omissions. Subject 153 does not appear to omit unknown words deliberately, though he does make several omission miscues. Subject 151, however, omits at first then makes various substitution attempts. For the proper name "Freddie," he substitutes "Billy," having already omitted the item once. Both syntactically and semantically, this is a very reasonable substitution, retaining the grammatical function of the ER, and being a real boy's name. Following this substitution, subject 151 omits Freddie in three successive occurrences, maintaining syntactic and semantic acceptability twice by altering the rest of the ER. The word "Father" is next substituted, and in the seven remaining instances of the item there are five more omissions, an unacceptable non-word substitution, and a final return to "Billys".

Subject 152 is much more consistent in her attempts at unknown words. There are ten occurrences of monkey in story 22. Having omitted the item in the first instance, she decides to substitute truck, and does so throughout the eight remaining appearances of the word. In her retelling of what she has read, subject 152 maintains that the story is about a truck. Although the substitution of truck for monkey is semantically unacceptable in the passage as a whole, it is acceptable within every sentence but two, which are identical:

"The little <sup>truck</sup> monkey had it."



Clearly the repetition of this miscue is supported by the repetitive syntax of the text, and its corresponding lack of semantic cues.

The 2L group shows graphic and phonemic means for word substitutions which are notably lower than all other groups. They may not get very close to the sound or shape of the ER. Together with their strong tendency to omit words deliberately, this appears to be evidence of some difficulty in processing the graphic information. This doesn't mean that they have no ability to use graphic cues. All subjects in the group produce miscues with some graphic and/or phonemic similarity between ER and OR, as these examples show:

OR	run	said	do	Freski	times	now	has
ER	ran	and	did	Freddie	things	not	had

Some factors that contribute to the low graphic and phonemic means are:

- (1) tendency toward habitual associations between specific words (get/can, said/and)
- (2) substitution of semantically and syntactically acceptable words (Billy/Freddie, Flip/Freddie, truck/monkey)
- (3) weak syntax which results sometimes in reading word-by-word and in other instances wide deviations from the structure of the text.

These readers seem to make most use of initial consonants but will sometimes substitute words with common letters that are not initial as the examples above show.

In addition to the deliberate omission of unknown items, the 2L group shows some tendency to produce sentences which are so unlike the ER that any word matching becomes quite difficult:

OR	I have not help the little kitten will we want little kitten to play.
----	--

ER	I am not too little to help with little things, am I?
----	---

OR	My dog look out here.
----	-----------------------

ER	My big doll is not here.
----	--------------------------

OR	Are you coming
----	----------------

ER	Here is something you can do.
----	-------------------------------

Sometimes, however, a meaningful sentence emerges from these gross departures from the text.

Can help
And we will find my monkey?

to get down
Here is something you can do.

Even in the most unacceptable of these miscues, however, some concern for syntax is quite evident. Their tendency to substitute verb for verb, noun for noun, shows concern for linguistic structure as well as words.

The 2L group's sensitivity to the grammatical acceptability of their miscues varies greatly with the individuals in the group. They all make some use of syntax but these readers do not demonstrate a strong ability to achieve syntactic acceptability, compared to other groups, with a mean of 43.7%, and a range from 31.6% to 70%. One reason for this is that deliberate omission of key words often results in loss of syntactic structure.

Another phenomenon occurs among these 2L readers which often interferes with the syntactic acceptability of their miscues. Several subjects make deviations from the text due to habitual associations. These associations are, at times, stronger than their concern for syntactic structure. This is a phenomenon quite distinct from the consistent application of "truck" for "monkey" after a deliberate omission. Subject 144 habitually associates are and and as well as get and can, as the following examples show.

Are  
And he had the blue airplane.

Are  
It  
And my red train is not here.

These habitual associations often result in syntactic jumbles but are sometimes worked into acceptable structures:

Here is something you can <sup>to get</sup> do <sup>down</sup>.

get.  
get me.  
Yes, you can.

Subject 150 also gives evidence of a habitual association in his oral reading:

Can  
And I can help you, Mother.

Can't  
Can't  
And Little Freddie did help Mother

can  
And Father and Jack.

Subject 150 substitutes can (or can't) for and several times, though he is able to read both words correctly at other occurrences in the text, where he makes successful use of both syntactic and semantic cues.

These habitual associations, like other repeated miscues, may be due in large measure to the empty, repetitious style of the text. They will be treated separately in another study. Multiple attempts on any given text item, whether they be different or identical to each other, whether they happen in one text occurrence or across text occurrences, reveal a great deal of information about the reading process. In the present study, however, the statistical data refers only to those non-identical observed responses to the text.

Such repeated miscues, however, are important to the present discussion because they reveal particular characteristics of the 2L group as well as of the material they read. As the following examples demonstrate, it is difficult to tell if the reader has made a substitution because of a habitual association, or simply because the text offers him no new information he might use to make a more successful attempt. From subject 144 come these miscues:

You can help with little things. <sup>time</sup>

I am not too little to help with little things. <sup>time</sup>

I can help with little things. (twice) <sup>time</sup>

From subject 153 come these miscues:

"Yes, yes," <sup>let</sup> laughed the man.

"Yes, yes," <sup>let</sup> laughed Mother.

Both subjects 150 and 152 demonstrate their familiarity with this sort of primersese, and they do so by substituting language even more stilted than the text itself:

OR "Too little, too little, too little to help!" he said.  
ER "Too little to help!" he said.

OR you, Little Kitten  
ER I can help the little kitten.

Subject 150, when confronted with two consecutive words he apparently feels unequipped to handle, makes this substitution:

OR Little Mother Hen  
ER Freddie laughed at Jack

The moral is that it's always a good idea to mention Little Mother Hen, since she's bound to turn up somewhere in the story. Syntactic and semantic acceptability are not achieved.

Frequency of miscues among the 2L readers is variable. The group MPHW is 11.7 with individuals ranging from 5.9 to 16.6%. These are not entirely comparable with older groups because of the procedure we follow for counting only the first instance of repeated miscues. Because of the limited vocabulary in the primer stories, repeated miscues will have a more disproportionate effect than in stories with more different words.

These relatively ineffective readers do correct from 12% to almost 100% of their miscues. Since many of these corrections cancel out semantically unacceptable miscues the comprehending scores fall between 42% and 73%. The 2L readers are not unconcerned about meaning.

No one reader in the 2L group stands out as totally atypical, however there are differences to be observed among these five children. A Black male (subject 153), with the lowest residual MPHW in the group (2.1) is also the child with the second highest correction percentage (31.1%). His percent of syntactically acceptable miscues is 17% higher than the next highest score (subject 153, 60%; subject 152, 42.6%). His comprehending score (72.8%), which is more than 12% above the next highest in the group, is not due to his correction of semantically unacceptable miscues (15.5%), but rather to his percent of miscues semantically acceptable before correction (42.2%). This comprehending score like the residual MPHW score, may be favorably compared with readers in the 2LA, 2HA, and 2H groups on more difficult material.

Subject 153 makes an interesting comparison with subject 144, another Black male, for this reason. Subject 144 has the second highest comprehending score in the 2L group (60.1%), primarily because he corrects 28.7% of his semantically unacceptable miscues; his semantic acceptability score is 31.4%, the second lowest in the group. Therefore, in spite of his relatively high MPHW (12.7%), his residual MPHW is not much higher than that of subject 153 (4.9%).

A third reader, 152, has a residual MPHW score of 3.3%, falling between subjects 153 and 144. This is due to yet another cause: Subject 152, a Black female, makes few miscues compared to other group members in the first place (MPHW 5.9, the lowest score for the group). This is the child who persistently replaced the word "monkey" with "truck" throughout one of the selections. Her semantic acceptability score is relatively high (36.4%), but only 5.9% of her miscues are semantically unacceptable and corrected and only 12.1% of her total miscues are corrected. Both of these percentages are group lows. She ends up, therefore, with the lowest comprehending score in the group (42.3%).

Two group members appear in the data to make virtually identical use of syntactic and semantic cues. Both make a large number of miscues, above 15 MPM, and for this reason terminate with high residual MPM scores (subject 150, 8.1; subject 151, 7.9) Their comprehending scores are virtually identical (subject 150, 51.4%; subject 152, 51.9%), because their semantic acceptability scores are only two percentage points apart (subject 150 - 30.6%, subject 151 - 32.5%). Almost the same percents of their total miscues are semantically unacceptable but corrected (subject 150 - 20.8%, subject 151 - 19.4%).

In general, then, these statistics reflect varying degrees of ability to make reading sound like language and make sense, though all 2L group members make similar kinds of miscues in their reading.

These 2L readers use graphic, syntactic and semantic cues, but they have trouble coordinating them to make them support each other. They get bogged down on the word level quite often and tend to omit words they're uncertain about. They show less control over the reading process than more proficient groups but the process they are trying to use looks no different.

#### Low Proficiency Fourth Graders: 4L

The low fourth graders in our study have not yet reached the proficiency of the low average second graders. The stories they read, Two New Hats and The Big Surprise, are from a first reader. Their reading of both is treated as a single task due to the stories' brevity. The group consists of three Black males, two Black females, and one Oriental female.

Two readers deviate from the tendencies of the group, one seeming to be much more proficient and the other much less. They are discussed later. But their deviation shows in a number of ways. The group MPM mean is 11.3. Subject 195 has MPM of 5.9 while subject 198's MPM is 18. Residual MPM for the group is 5.11. Subject 195 has residual MPM of .55 while for 198 it is 12.17, so these deviations are qualitative as well as quantitative.

The group is successful to a considerable degree in using grammatical information to predict structures; their syntactic acceptability mean is 46.7%. Their semantic acceptability score is typically lower: 34.5%. Those miscues semantically unacceptable but corrected average 25.2%; only two subjects are below this mean, however. Comprehending scores range from the 32.4% of subject 198 to the 90.9% of subject 195; the group mean is 59.8% with the other subjects ranging from 50% to 74%.

The 4L group shows relatively low grapho-phonemic means, though these are not as low as the 2L group. Grapho-phonemic means for the combined stories range from 4.34 to 6.16; phonemic means range from 3.09 to 4.99. The group mean for graphic proximity is 5.1;

the group mean for phonemic proximity is 4.18.

Subject 198, the deviant low reader has a graphic mean of 4.3 and a phonemic mean of 3.09. Both are low for the group. But 195, the deviant high reader is well within the group range.

Two readers typical of the 4L group make an interesting comparison, primarily because from a quantitative point of view their miscues look so similar. Their differences only appear in a qualitative analysis of their miscues. Subject 200 has MPH<sub>w</sub> of 10.8, subject 201's MPH<sub>w</sub> is 10.5. There are two scores above these and two scores below in the remaining membership of the group. Percents of corrected miscues are quite high and close for these two readers (200 - 42%, 201 - 38.2%); percents of syntactic acceptability are closer still (200 - 55.9%, 201 - 57.2%). Remarkably close are their percents of miscues unacceptable but corrected: 28.5% (200) and 28.2% (201). Yet one reader shows a residual MPH<sub>w</sub> of 2.92 (200) and the other a residual MPH<sub>w</sub> of 4.61 (201). The difference is accounted for in their percents of miscues semantically acceptable before correction. While subject 200 demonstrates considerable control of meaning with semantic acceptability of 45.5%, subject 201 shows only 28% semantically acceptable miscues. This accounts for the variation in comprehending scores (200 - 73.9%, 201 - 56.2%) and finally in residual MPH<sub>w</sub>. We will examine some of the miscues of each reader which underlie these percentages.

Subject 200 makes obvious use of semantic cues in her substitutions:

"I see a monkey," said Ted.

"It looks like a <sup>chipmunk</sup> circus monkey."

"A <sup>chimpanzee</sup> circus bear!" said Ted

All the <sup>balloons</sup> boys and girls in Green Hills will

get circus <sup>(c)</sup> balls  
balloons.

"How <sup>nice</sup> Hello there!" said Little Monkey.

<sup>(c)</sup> Then Mrs Duck saw <sup>Mouse</sup> Little Monkey.

Cat  
Soon Mrs Duck saw White Kitten.

The last two examples were miscues made by other readers as well.

The syntactic acceptability of subject 200's miscues demonstrates her attention to grammatical cues:

walked  
And away he went for a walk.

(AC) it's in  
I know it is there.

(C)  
She said "Now I know what came out of

that  
the apple tree!

those  
"Oh look at all the balloons!"

Though this miscue is of considerable complexity, it is clear that the reader is correcting when the syntax of her response becomes unacceptable:

Oh here's (C)      now  
Who has a pretty new hat?"

Story 28 causes several non-word miscues. It is a mark of her greater proficiency that subject 200 chooses to substitute a non-word rather than omit an unfamiliar lexical item. These particular items, however, happen to be of special importance to the reader's understanding of the story. One such item is the word surprise. Having first made a real word substitution,

"Blow it up, and then you will see

airplane  
a big surprise".

the reader then tries a non-word:

\$ spear in  
Is this balloon your surprise?

In the three remaining occurrences of "surprise," she repeats her non-word invention.

The miscues of subject 201 are similar to those of subject 200 in terms of their syntactic acceptability. They include,



however, several unusual miscues involving pronouns:

him  
her  
she  
And away he went for a walk.

her  
And on she went for a walk.

This last miscue occurs identically in two text occurrences. Such constructions do not appear in this child's oral retelling, however.

Like subject 200, subject 201 substitutes non-words for unfamiliar lexical items, and to a limited extent is able to use succeeding text occurrences to gather additional information and make other attempts. The word "circus" elicits a series of responses in eight text occurrences:

1. ch- chan- \$channert \$channert
2. chat- chatted
3. chatted
4. chatted
5. chatted
6. chat
7. costume chatted
8. \$chavit

The substitution of "costume" in the seventh instance of the word is an indication that the reader has used some semantic cues from the context ("clown" and "balloon," for example). Subject 201 substitutes other non-words for "spring," "surprise," and "clown."

Like subject 200, subject 201 does make several meaningful substitutions: "cat" for "kitten" and "home" for "house" are examples of these. But the difference in their semantic acceptability scores (200 - 45.4%, 201 - 28%) is due to miscues such as these made by subject 201:

with  
Soon Mrs Duck saw White Kitten.

booked  
"I like your pretty new hat."

pet  
"I will put it on now."

threes  
He saw the green trees.



c) <sup>noise</sup>  
"Your long nose and your hat make you

look like a clown."

These miscues have grammatical acceptability but not meaning acceptability. Subject 201 seems to be distracted by graphic and syntactic cues from meaning but then uses meaning as a check on his miscues. Subject 200 is better able to use all three cue systems initially. The net result is that subject 201 is a less efficient and effective reader.

Subject 195 is the one who appears to be a much more proficient reader than the rest of the 4L group. Both qualitatively and quantitatively, her miscues are more like the 4A group than the 4L. She has a lower MPH than any other 4L reader (5.88 on the combined stories). Due to relatively high percents both of miscues semantically acceptable (58.5%) and of miscues semantically unacceptable but corrected (32.4%), her residual MPH is only .55. The residual MPH scores of other group members range from 2.92 to 12.17. Interestingly, this is the reader with the highest dialect involvement in the 4L group (27.35%). Other readers, while attaining much less syntactic and semantic acceptability on the two stories, make dialect miscues which range from 1.1% to 12.6%. Of course these figures must be related to the MPH of each reader.

Unlike the other readers in this group, subject 195 appears to have little difficulty with the names of the characters in the two stories she read. Only on two occasions does she make any miscues on these various names, and both times she produces acceptable, meaningful sentences:

Kitty  
Soon Mrs Duck saw White Kitten.

Cat  
"Good morning," said White Kitten.

Other readers make various omission and substitution miscues on these proper names:

c) Soon Mrs Duck saw (White Kitten)

Money  
Then Mrs Duck saw Little Monkey.

Mouse  
M-  
"Hello there," said Little Monkey.

Subject 198 encountered difficulties with the name "Ted," in

The Big Surprise (story 28). His first observed response - and also his graphemically closest substitution - was "Red." He tried "Tin," then landed on the real name "Tim," which he persistently adhered to throughout the remainder of the story. But, still unsure of himself, in one single text occurrence of the name "Ted" subject 198 made seven separate attempts. Subject 199 had similar difficulties. It is interesting that he, too, after several real word but non-name responses, decided on "Tim" as a substitute for Ted.

Though her miscues are relatively few, subject 195 makes several miscues which serve to demonstrate her concern for syntactic and semantic acceptability:

Then he said, <sup>How did</sup> "Now do you know what my

balloons are for?"

But she did not see a <sup>anything</sup> thing.

© I'll  
I will help you.

In general, she corrects miscues which are unacceptable with the portions of the text which follow:

© They  
Then he saw the man.

© the  
What are they for?

It is  
"Is this balloon your surprise?"

can  
"I came to tell the boys and girls..."

The opposite extreme in reading proficiency is represented in the 4L group by subject 198. His MPHW is 18.04 on the combined stories, which is reduced to a residual MPHW of 12.17 by discounting those miscues either semantically acceptable or corrected. His percent of those miscues unacceptable but corrected is only one percentage point above the low score for the group and is several points below the group mean (subject 198 - 19.1%, group mean - 25.2%). His percent of miscues semantically acceptable before correction, however, is only 13.3%, while the closest score in the group is 28%, and the group mean is 34.5%.

It is extremely unusual that this reader's semantic acceptability

score is not less than his syntactic acceptability score, but rather exactly identical to it, on each of the two reading selections. Since readers can and do produce very grammatical sentences where the meaning is either lost or ambiguous or perhaps a total anomaly, semantic acceptability scores are generally 10% to 20% below syntactic acceptability scores.

Both acceptability scores are lowered, of course, by this subject's deliberate omissions of unfamiliar words, a strategy common in the 2L group. These are only a few of the many examples:

He <sup>was</sup> saw the (spring flowers).

Is this balloon your (surprise)?

"He is in the (circus)," said the man.

After a (time) the man said...

I came to tell the boys and girls the (circus  
is coming).

It is interesting that this subject read correctly the rather difficult word "laughed," but omitted it entirely when it appeared in the same sentence but in capital letters:

(we) So She laughed and (LAUGHED).

An habitual association, the grapheme reversal of "was" for "saw", creates numerous unacceptable structures for this reader:

(After) a (time) Mrs Duck <sup>was</sup> saw a big old apple tree.

(c) Soon Mrs Duck <sup>was</sup> saw (White Kitten).

Then Mrs Duck <sup>was</sup> saw Little <sup>Money</sup> Monkey.

<sup>was</sup>  
He saw the green trees.

He tends not to correct these incomprehensible sentences.

The general insecurity of this subject as a reader is apparent in his repetitious running starts, somewhat like his seven consecutive attempts at the name "Ted," in one occurrence.

ER Here is a long red one for you.  
OR Here is a  
Here is a  
Here is a red  
red  
red one  
red  
red one for you.

ER Now do you know what my balloons are for?  
OR Now do you know what  
what  
what  
what  
what me  
me  
my balloons are for ?

ER I came to tell the boys and girls...  
OR I can  
I can  
I can to  
I  
I come to tell the boys and girls...

ER Something came down.  
OR She can  
She  
Some  
Some can down.

Yet, despite his difficulties, this subject is not without some concern for meaning and grammar in his oral reading. His final decision upon a real boy's name as a substitution for Ted is indicative of this. Also, after omitting the word "circus" in each of its seven previous occurrences, he substitutes the very meaningfully acceptable word "fair" in the last line of the story:

<sup>fair</sup>  
"The circus is coming soon!"

This reader used numerous semantic cues in the story (balloons, various animals, etc.) to arrive at the idea of a "fair".

In contrast with the 2L group the 4L readers, still dealing with quite easy materials are able to use the three systems: graphemic, syntactic, and semantic with greater coordination if not integration. They are less likely to omit deliberately and more likely to produce non-words that are graphically close or real words that fit their syntactic and/or semantic predictions. They tend to be

lower than other groups in graphic and phonemic proximity but not so notably as the 2L readers.

This group shows an unusually strong tendency to correct which indicates greater confidence and competence than the younger low readers.

Variations among readers in their control of the reading process is apparent among these six youngsters even when they produce comparable quantities of miscues.

#### Low-Average Proficiency Second Graders: 2LA

Five readers compose the 2LA group. These include four Black males and one Black female. They read story 44, Kitten Jones, taken from the beginning of a third grade reader.

The children in this group use both syntactic and semantic cues more successfully than the children of the 2L or 4L group. Their syntactic acceptability mean is 68.1%, with a range from 62.1% to 80.9%. The group mean for semantic acceptability, dependent upon syntactic acceptability is 46.9%. Semantic acceptability ranges from 29.5% to 56.9%.

A frequently occurring type of miscue which is both syntactically and semantically acceptable is the synonym substitution. Sometimes the OR word is not completely synonymous with the ER word, but within the context of the sentence does not make any major meaning change. All readers in the 2LA group make such miscues, as they predict the author's meaning and demonstrate their concern that reading should make sense. From subject 204 come these substitutions:

They took pictures of their mother wearing her

pretty  
party clothes.

dumped  
She thumped the camera with her white fur paw.

From subject 205 we have these:

Mr. Jones finished the pictures himself.

He painted them upstairs in his the dark darkroom.

I give her this pretty round bell ball to play with.

Subject 206 provides these examples:

I would like to win one of <sup>own</sup> these <sup>these</sup>.

There will be <sup>a surprise</sup> prizes.

They took pictures of their mother <sup>(c) washing</sup> wearing her  
her party clothes.

Subject 209 has the lowest semantic acceptability score in the group (29.5%), yet despite the several non-words and otherwise unacceptable sentences he produces, his miscues include a few substitutions which fit well into the story:

There are baseballs, bat, <sup>mechanical</sup> marionette dolls, and  
big balloons...

<sup>Mechanical</sup> "Marionette dolls!" <sup>explained</sup> exclaimed Sue.

Subject 207 has a lower MPH than any other 2LA group member, 6.63, and this figure includes a high percent of syntactically acceptable non-words, yet the following miscues are of the type we are describing:

Mrs. Jones looked up from her <sup>song</sup> sewing...

They took pictures of their mother wearing her  
<sup>pretty</sup> party clothes.

She began to <sup>snuff</sup> sniff at it.

One measure of a reader's sensitivity to syntactic and semantic acceptability is his percent of correction, and particularly his correction of those miscues which are semantically unacceptable. Readers of the 2LA group correct an average of 27% of their miscues, but they correct an average of only 18% of their semantically acceptable miscues. Here are some examples which are evidence of a concern for meaning:

And she always had that <sup>(c) spot</sup> spot of black fur above  
her nose.

Want  
wante  
Now she walked over to the camera.

Jew  
The second Judge said, "I give her this pretty  
round ball..."

"How many are there in your family?"

Mrs  
...people asked Mr and Mrs Jones

Many miscues which require correction, however, are left uncorrected by the 2LA group, such as these syntactically acceptable but semantically unacceptable ones:

Shoe looked  
Penny and Sue Jones liked to wear pretty colored  
dresses.

vanes  
Now stand still here by the rose vines.

father  
You can see every feather on that bird.

father  
You can almost count the feathers.

chairs  
Three cheers for Kitten Jones.

climbed  
She thumped the camera with her white fur paw.

sweating  
sweat  
Mrs. Jones looked up from her sewing.

Uncorrected graphically close, non-word substitutions are responsible for the semantic unacceptability of many sentences read by this group:

ER  
marionette  
proud

received

OR  
\$mi - oo - ill  
\$ proud

\$rist

exclaimed	\$explended
corners	\$corner
judges	\$jugets \$jegyle
sewing	\$swingt
contest	\$consete
crow	\$coround
clear	\$care=ee
exclaimed	\$alonex-ed, \$amonx
camera	\$alaxment
excuted	\$cahmer
	\$encited

In contrast, the 2L group demonstrates almost no inclination to produce non-words. They tend to omit unfamiliar items, or substitute a known word, frequently making little sense. The 2LA readers as a group show less tendency to omit these items deliberately, though subject 206 does omit several items, leaving structures both grammatically and meaningfully unacceptable. From subject 206 come these examples:

Jack Jones always went around in overalls or  
a sun suit.

Kitten Jones would not have changed her white fur  
coat for anything.

One day Penny rushed up the front steps...

All the family stood around him when the prints  
were done.

"We must send this picture of the crow to the  
contest," Mr. Jones decided.

Subject 205 omits the word "marionette" in two occurrences,  
but these omissions do not result in unacceptable sentences.

"There are baseballs, bats, marionette dolls and  
big balloons," said Penny.



The mean comprehending score for the 2IA group is 64.7%, with two relatively high scores of 75.9% and 76.6%, two moderate scores of 59.6% and 60.2%, and one relatively low score of 51.1%. In the case of subject 204, his high 75.9% may be credited to his high semantic acceptability score, the highest for the group (56.9%), since he has only a moderate percentage of miscues which are semantically unacceptable but corrected (19%). Subject 205 makes fewer semantically acceptable miscues (46.9%), but corrects more unacceptable ones than any other 2IA reader (29.7% of his total miscues). The lowest comprehending score, made by subject 209, is due to his very low percentage of semantically acceptable miscues (29.5%), not to his correction percentage: Subject 209 has the second highest percent of miscues semantically unacceptable but corrected in the group (21.6%). Here's another example of a reader who is easily diverted from meaning but who then is aware of some need for correction.

Again it is clear that though two or more subjects may look statistically quite similar with respect to any particular category (such as the comprehending score) a look at other data will show differences in how they use the reading process.

We look at percents of semantically acceptable miscues and correction of semantically unacceptable miscues because they are in fact the components of the comprehending score we are discussing; this category, however, has an interesting lack of relationship to other categories as well. One might assume, for example, that the readers with the highest comprehending scores are those with the lowest MPHMs and the least evidence of dialect. The 2IA group, however, provides unmistakable evidence that this is not necessarily true. In one case, the highest comprehending score (76.6%) and the highest dialect percentage (9.4%) are made by the same subject (205), in combination with an MPHm that is quite moderate for the group (9.06%). In another case, the subject with the lowest comprehending score (51.1%) does in fact have the highest MPHm (14.69) but the second to the least dialect involvement in the group (1.1%).

In addition to those sorts of miscues which are characteristic of the group as a whole, other types of miscues may appear in the oral reading of particular children. Two such children are subjects 204 and 209. Subject 204 has a strong tendency to delete terminal punctuation, often accommodating the second of the sentences to the first to arrive at an acceptable structure. These examples are among eight which demonstrate the strength of this tendency. They show the subjects' ability to predict acceptable structures.

I'll have to turn it to the next one <sup>now. Stand</sup> Now stand

still...

All the family stood around him <sup>•When</sup> when the prints  
were done <sup>how</sup> how they laughed...

Subject 209 tends to omit entire lines of text. He occasionally accommodates to the remainder of the text, but in most instances the text is so repetitious and empty that no accommodation is necessary:

ER Penny and Sue Jones liked to wear pretty

colored dresses. Jack Jones always went

OR <sup>ground-in</sup> around in overalls or a sun suit.

OR a prize like  
ER There will be prizes for children who take

the best pictures. You should see those

prizes.

These readers in the low average range of second grade are clearly more effective than low second and fourth grade readers. They, like all other groups in the study, show no evidence of phonics problems, inability to use graphic cues effectively. They show an increased ability to integrate the three cue systems, while keeping the focus on meaning.

Groups 2HA and 6L Reading Story 47: Billy Whitemoon\*

Although these two groups differ very much in age and of course, in years of instruction, on the basis of a number of points of comparison the second grade group appears to read with greater proficiency.

The 2HA group has an MPHW mean of 2.0, just above half of the 6L MPHW mean of 15.6. Their residual MPHW means are 4.3 and 10.2, respectively. Comprehending scores average 53.1 for 2HA, as compared to 37.2 for 6L. In syntactic acceptability, semantic acceptability and correction the 2HA means all appreciably exceed those of 6L (see Table 5-1).

The 2HA readers correct 37% of their syntactically unacceptable miscues as compared to 17% of their fully acceptable ones. Readers in the 6L group correct 18% of fully unacceptable

\*This sub-study is the subject of an unpublished doctoral dissertation. Louise J. Jenson, Michigan State University, 1972.

Table 5-1

Comparative Data: 2HA and 6L

Story 47

	2HA		6L	
	Range	Mean	Range	Mean
MPHW	4.9 -15.1	8.6	9.7 -19.3	15.6
Comprehension	27 -51	35	27 -57	39
Comprehending	40.7 -75	53.1	17.5 -59	37.2
Semantic Acc.	22.7 -60.4	37.1	10 -39.3	25.5
Syntactic Acc.	44.4 -87.5	58.8	35 -53.8	47.4
Correction	15.7 -29.3	22.6	7.5 -26.2	13.9
Graphic Mean	5.27 - 6.63	5.66	4.51 - 7.01	5.88
Phonemic Mean	4.65 - 5.89	5.18	3.95 - 6.40	5.28
Syntactic Change	7.52 - 8.33	7.80	7.34 - 8.05	7.79
Semantic Change	6.24 - 8.04	7.36	6.05 - 7.64	7.10
Residual MPHW	1.22 - 8.28	4.30	4.1 -15.78	10.22

miscues and 7% of fully acceptable ones. Both groups have their highest rate of correction when semantic acceptability is considered among miscues acceptable only with prior context (30% for 2HA and 20% for 6L). 2HA corrects similar percents of semantically unacceptable (20%) and fully acceptable miscues (19%), while 6L corrects 13% of unacceptable miscues but only 8% of fully acceptable ones.

The 6L group shows a tendency not to correct miscues with high graphic proximity (53% of those not corrected had high proximity, 30% of those corrected did) and a tendency to correct miscues with no and low proximity (19% of uncorrected miscues had low proximity). Subjects in this group vary, however, in how consistently they use word omissions, the figures are: uncorrected 7.4%, corrected 3.2%.

The 2HA group also tends not to correct high proximity miscues (49% of uncorrected and 26% of corrected have high proximity) but switches on moderate proximity (52% of corrected miscues, 36% of uncorrected). Low proximity miscues are more heavily corrected also (12% of corrected, 6% of uncorrected). Figures are comparable for both groups when correction and phonemic proximity are compared.

In summarizing correction activity it can be noted that while 2HA has higher rates of correction, both groups are tending to correct more syntactically unacceptable miscues, miscues semantically acceptable with prior text, and miscues with low graphic proximity.

In graphic and phonemic means, the 6L group is slightly

higher and has wider ranges.

Though the two groups differ in the percent of semantically and syntactically acceptable miscues which are subsequently judged for syntactic and semantic change, the mean scores for change are quite similar for both groups.

The comprehension ratings for both groups are within roughly the same range, with the mean actually higher for the 6L group. This appears not to be consistent with the range edge the 2HA group has in its comprehending score mean, perhaps reflecting the greater maturity and general knowledge of the older sixth grade subjects.

The miscues of the 6L group involve transformations to a greater extent than those of the 2HA group, partly because they indicate a greater use of dialect (same deep structure: 6L - 20%, 2HA - 8.3%) and partly because they indicate more loss of deep structure (6L - 18.7%, 2HA - 7.6%).

Miscues of the 2HA group indicate their ability to come up with alternate options to the surface structure of the written text more often than the 6L group (2HA, 2.9%; 6L, .4%).

In word for word substitutions, the 2HA group has a higher percentage of same category substitutions than the 6L group in all grammatical categories. This is particularly notable for verb-verb substitutions (83% - 68%) and function word substitutions (74% - 54%). The 6L group also produces a larger number of indeterminate OR's.

#### Low Proficiency Sixth Graders: 6L

There are four Black males and two Black females in this group.

They contrast with the 2HA readers of the same story and even more sharply with average and high sixth graders. For example, their residual MPHW (10.22) compares with 1.07 for 6A and 1.78 for 6H on substantially more advanced material. Their graphic and phonemic proximity means are very similar to those of more proficient groups of readers, however.

A majority of the 6L readers depend greatly on visual cueing that involves either beginning elements or single graphic differences.

know fun was sky.  
Billy knew that fawns were always very shy.

The above is a classical example of the word-bound reader who is so concerned with producing a word that fits his graphic picture, that he can do little about making sense of the passage. This leads us to an investigation of the semantic acceptability of these

readers' miscues. A look at Figures 3-17 and 3-18 (page 52) shows that only the 10%61 readers have range and mean of semantically acceptable miscues that are lower than the 6L readers. At this point we begin to see differences in the way the 6L students process reading. Two readers (189 and 193) look more like the 2HA and the 6H readers in that their concern for meaning is evident and that they predict on the basis of semantic and syntactic information.

answered  
 "Oh but he is mine," Billy insisted.

certainly  
 ...the hunters would surely shoot him.

hurt  
 You might get hit.

These two readers often have such an aim for meaning that syntactic structure is not well used. Semantic anticipation is shown in their miscues:

afraid  
 ...to see if there was any danger. He heard the...

proud  
 Billy was so pleased by the hunter's words.

For the most part these two readers produce miscues that are semantically and syntactically acceptable in the total passage.

rushing      Leftfoot  
 There was a rustling sound. Lightfoot came leaping...

When miscues are semantically acceptable only with the first part of the sentence, these two readers often correct.

lived  
 Billy liked to rake...

send  
 They would spend days picking...

When these readers are unable to make syntactic confirmation with the last part of the sentence, they usually correct.

come  
 But when the heavy snow was gone from...

beautiful      He will make good pet."  
 "What a beauty!"

Very  
 Every spring...

Although readers 189 and 193 are sometimes strongly influenced (misled) by visual cues, they are able to use confirming and correcting strategies within the syntactic and semantic cueing systems.

⊖ straight ⊕ pat  
 The sight of his pet frightened Billy...

Reader 189 is able to put his training in graphics and phonics into proper perspective and correct miscues that are syntactically or semantically unacceptable, however he is unable to overcome pedagogical admonitions to "pronounce carefully", "enunciate," "sound-out," and/or "stress the endings of words." This "supercorrect" form is evident in the reading of this more efficient reader as well as in one other poorer reader in the 6L group. For example: likeded, helpeded, pickeded, stoppeded, smileded, campeded, wisheded.

Having looked at the two most proficient readers in this group we will now look at the other members. They have a low syntactic acceptability range (27% - 45.1%) and a low semantic acceptability range 10% - 26.9%. Their comprehending (semantically acceptable or corrected) range is low (17.5% to 37.6%), and their range of residual MPHW is very high (12.14% to 15.78%). The two more proficient readers discussed above have residual MPHW means of 4.1% and 5.2%.

These readers often show a preoccupation with word naming. They omit unknown words or make real or nonword substitutions largely on the basis of graphic cueing and often with minor regard for syntax or semantic acceptability.

This spring Billy was delighted that the roots had made  
 sure  
 such beautiful colors.

When summer ended, the Whitemoons packed their belongings  
 pick they belong  
 again.

This spring Billy was delighted that the roots had  
 should  
 such beautiful colors.

Lightfoot was so much bigger now that the hunters would  
 beginning he had

shouted  
 surely shoot at him.

The 6L readers sometimes depart from the text using graphic information as clues to an entire structure. These departures sound like natural language and are usually syntactically acceptable, if not always semantically acceptable. They show an attempt to get to meaning through syntax, however ineffectively.

fin was ready to get  
...he and the fam would race together through the forest.

loved to tray put  
She let travelers who bought them take her picture.

sure ugly  
He was still angry

sung softly  
Billy smiled shyly

The range of dialect means for the 6L group is 7% to 33.3%. Subject 188 has the greatest amount of dialect involvement, including some structural changes and for the most part including inflectional endings.

live  
He lived with his father...

mens womens  
All the men and women and...

broke  
Then he noticed that this one leg was broken.

they  
They packed their kettles, blankets...

It is interesting that none of this (188) reader's dialect miscues involve lexical changes, and only twice is there a supercorrection (e.g., likeded). Although it is not coded for statistical analysis, this reader has a great deal of phonological dialect.

This reader frequently substitutes non-inflected forms:

send  
...they put in boxes and sent to the city.

begun  
Then he began to sing.

sing  
If he sang...



he dress come  
Next year when the (Winnebago) Dance time came...

The general picture presented by the majority of the 6L readers is unbalanced. Their attention to graphophonics is a mixed blessing: the beginning elements keep them moving through the passage and often lead them on delightful flights of fancy that sound like language, but don't always make sense.

Compared with other subgroups, they make maximum numbers of miscues and employ a minimum amount of correction strategies (including production of partials as a correction tactic).

They have some reading strategies, but their preoccupation with the graphic phonemic cueing system and with word naming is overwhelming.

#### High Average Proficiency Second Graders: 2HA

The 2HA group consists of two Black females, one Black male and two White males.

Two subjects in this group stand out as more proficient than the other three: 124, a White male, and 125, a Black female. These two subjects make fewer miscues per hundred words, and their miscues are of a higher quality than those of other subjects. Their comprehending scores are 15 and 30 percentage points above the next highest group member. The result is that their residual MPHW scores are 2.5 (124) and 1.22 (125), while the remaining group members range between 4.26 (133) and 8.28 (122).

All readers in the 2HA group are using grapho-phonetic information to a moderate extent: their graphic mean is 5.66; their phonemic mean is 5.18. The Black female reader who is possibly the most proficient reader among the five has the highest graphic and phonemic means not because she is more concerned about graphophonetic input, but rather because an extraordinarily high percentage of her miscues are substitutions of dialect forms. These are systematically and consistently coded as homographs, hence a high graphic proximity score. Had her dialect miscues not been included, her MPHW would have been even lower (though residual MPHW would not have been affected).

The only subject in the group with no dialect miscues is a Black male (subject 422) who has both the highest MPHW (15.3) and the highest residual MPHW (8.28) of any group member. His percentage of miscues semantically acceptable before correction is the lowest in the group (22.7%). Other group members show dialect percentages ranging from 4.1 to 11.1%.

The members of the 2HA group offer evidence of their concern for meaning in a number of ways, particularly in their tendency to correct and in their miscues which result in semantically acceptable sentences. Group members look quite similar with



regard to the first of these two, and quite different from each other with regard to the second.

The group mean for corrected miscues is 22.6%, ranging from 15.7% to 29.3%. The two most proficient readers are very close, 26.5% (124) and 29% (125), but among the other three it is the reader with the greatest number of miscues who does the most correcting. He is remarkably persistent in his attempts, regressing up to nine times in order to arrive at what he considers an acceptable, meaningful structure. Here is an example:

- ER "How do I know he is your deer?"  
OR 1. No  
2. How did  
3. How  
4. Now di-  
5. Do you know I  
6. Now do I know how you  
7. How  
8. How do you know  
⑨ 9. How do I know he is your deer?

This reader also uses a number of partials in his attacks on unknown lexical items:

\$carnberries  
carber-  
OR car-  
ER cranberries

⑩ Winnebago  
⑨ Winnebago  
Winne  
Winne-  
OR Win-  
ER Winnebago

In contrast, one of the two more effective readers (124) often chooses to "correct" unacceptable miscues by simply accommodating the remaining portions of the text sentence to his earlier miscue. Here are some examples:

could  
His eyes caught sight (of) a red jacket.

d  
Billy loved all wild animal⑩.

rested and roasted fresh  
Billy feasted on roast corn and baked fish.

In a manner typical of the group as a whole, the miscues of subject 121 are either corrected immediately, as soon as they become unacceptable, or allowed to become lost in garbled structure. He, too, however, occasionally manages to maintain enough syntactic control over lengthier segments of text in order to accommodate for his miscues:

When  
Then Billy and his father built a summer

house<sup>†</sup> They covered it...  
house<sup>ⓐ</sup>

...he stepped between the hunter

and Lightfoot<sup>ⓐ</sup> Get out of the way, boy!<sup>ⓐ</sup>

Subjects 124 and 125 demonstrate their greater proficiency, however, with regard to semantically acceptable miscues, rather than correction, again it appears that the best indication of a reader's effectiveness is the percent of his miscues which are semantically acceptable before correction. Subjects 121, 122, and 123 have semantic acceptability of 25.9%, 22.7%, and 29.4%, respectively, while subjects 124 and 125 have 46.9% and 60.4%. This latter figure is very much related to the subject's high percentage of dialect miscues (35.4%) which, as in the graphic proximity category, would reflect total acceptability and no change. Even taking into consideration this high percent of dialect involvement, however, both scores are well above the remaining three.

Semantically acceptable miscues are of many types. Those of subject 124 are generally optional changes, frequently involving the substitution or omission of proper names, which in no way confuses the cast of characters:

Bill White<sup>-moon</sup> wood<sup>ⓐ</sup>  
Billy Whitemoon was a Winnebago Indian boy.

Those of subject 125 are also of this type, and as the following example shows, frequently involve both dialect and some minor editing:

Billy named<sup>ⓐ</sup> his<sup>little</sup> pet Lightfoot, because he could run  
so fast.

All 2HA readers make semantically acceptable miscues involving

word for word substitutions.

Subject 121:

They packed their kettles, blankets, clothes, and  
packages  
other baggage

Subject 122:

...to keep the family dry in rainy weather  
winters

Subject 123:

She made her own paints from the roots...  
plants

The man lifted his gun to his shoulder.  
shooter

Lightfoot came leaping thru the woods.  
limping

Subject 124:

Every spring Billy helped his father  
mother

Subject 125:

All the Winnebago Indians camped near the river.  
came

The sight of his pet frightened Billy  
sign

From the strings she made beautiful baskets  
had

Miscues involving function words, particularly optional function words, are very common, and the reading of subject 121 offers numerous examples:

Billy knew that spring had came.  
the

She made her own paints from (the) roots.

Billy feasted on <sup>the</sup> roast corn...  
A

White men came from the cities  
their



unacceptability in the 2HA group:

ER	OR
taught	\$tatched
shyly	\$hinely
cranberry	\$canberry, carnberry, caraberry
feasted	fastendar
fawn	fraum
gathered	gratherded
tribe	trib, trible

Though ultimately resulting in a loss of meaning, this nonword response to unfamiliar lexical items may be favorably compared to the response of many 2L and 4L readers, who prefer to omit unknown items and leave a structure not only semantically unacceptable, but syntactically unacceptable as well.

Syntactic acceptability percents are somewhat varied, and the distinction between the two more effective 2HA readers and the three less effective ones is not particularly apparent. The mean syntactic acceptability score for the group is 58.8%, but the range is wide:

Subject	Percent Syntactically Acceptable
121	44.0
122	48.0
123	52.9
124	61.2
125	87.5

Again dialect influence must be taken into consideration. Miscues caused by a difference between the dialects of the reader and the author are syntactically acceptable.

The comprehending scores (percent of miscues semantically acceptable plus percent of total miscues semantically unacceptable but corrected) of subjects 121, 122, and 123 are quite close: 40.7%, 45.3%, and 43.4%, respectively. Subject 122 compensates for his low semantic acceptability score with correction: 22.7% of his total miscues were semantically unacceptable, but corrected, in contrast with 14.8% (subject 121) and 13.7% (subject 123). Again subjects 124 and 125 stand apart as more effective readers, with comprehending scores of 61.2% and 75%, respectively. As before, the high percent of dialect miscues produced by subject 125 must be considered with regard to this measure, since dialect miscues are considered fully semantically acceptable.

In the case of subjects such as 122, residual MPH is a particularly revealing figure. Having a much higher MPH score than other group members, subject 122 manages to reduce his MPH

from 15.13 to a residual score of 8.28, while other 2HA group members reduce theirs by approximately 3.0 in three cases and 4.0 in a fourth.

	MPHW	Residual MPHW
121	8.88	5.26
122	15.13	8.28
123	7.48	4.26
124	6.44	2.50
125	4.88	1.22

The importance of a qualitative - as well as a quantitative - examination of readers' miscues becomes quite clear.

In summary, the 2HA readers are quite concerned about meaning and demonstrate this in their acceptable substitutions, minor and optional transformations, tendencies to correct and, to a lesser extent, to accommodate rather than regress. Non word miscues and an inconsistency in correcting other semantically unacceptable miscues are evidence that this concern for meaning is sometimes inadequate to handle all problems.

The 2HA readers are using graphophonic cues to a moderate extent. The 2HA readers' ability to handle complex syntax varies among group members, but exceeds that of either the 2L or the 2LA. Some very complex transforming occurs in this group indicating their awareness of reading as language. And finally, the extensive use of a dialect other than the author's obviously has not in any way hindered the comprehending score of one reader: the graphophonic, the syntactic, and the semantic cueing systems continue to function for her in both an effective and an efficient way.

Groups 2H and 4A reading Story 51: Freddie Miller, Scientist

These groups are closer together in grade level than those who read story 47 and would be expected to be more proficient. They read a story from a fourth grade basal reader.

On some criteria by which the 2HA group appears to be superior to the 6L, the 2H group also exceeds the 4A group. In MPHW, 4A readers have a mean (8.6) which greatly exceeds the 5.5 mean of 2H readers. Residual MPHW's are 4.5 and 1.9, respectively. Comprehending, semantic acceptability, and correction means are all decidedly higher for the 2H group (see Table 5-2).

Syntactic acceptability, however, is close for both groups in both range and mean. This contrasts with the 2HA and 6L groups. The 4A group produces 55.2% syntactically acceptable miscues but only 35.9% semantically acceptable ones. The 2H readers have 58.5% syntactic acceptability and 49.6% semantic. Since all semantically acceptable miscues must be syntactically acceptable the respective gaps indicate comparable ability to deal with syntax

Table 5-2

Comparative Data: 2H and 4A, Story 51

	2H		4A	
	Range	Mean	Range	Mean
MPHW	3.1 - 8.9	5.5	6.8 - 12.1	8.6
Comprehension	40. - 57.	46.2	37. - 75.	52.8
Comprehending	65.3 - 87.8	70.2	21.7 - 69.8	51.3
Semantic Acceptability	31.1 - 55.1	49.6	16.3 - 56.6	35.9
Syntactic Acceptability	41.0 - 65.3	58.5	47.8 - 64.2	55.2
Correction	12.0 - 51.2	30.8	9.8 - 36.0	21.6
Graphic Mean	4.3 - 5.1	4.61	4.9 - 6.2	5.34
Phonemic Mean	4.0 - 5.0	4.45	4.3 - 5.9	4.79
Syntactic Change Mean	6.6 - 7.2	6.96	7.2 - 8.4	8.01
Semantic Change	6.4 - 7.6	7.15	6.5 - 8.2	7.12
Residual MPHW	.51 - 4.24	1.86	2.18 - 9.44	4.46

but lesser ability to derive meaning by the average fourth graders.

The readers in the 2H group correct 31% of their miscues as compared with 22% for 4A. But 56.1% of 2H's syntactically unacceptable and 56.3% of their semantically unacceptable miscues are corrected. The 4A group corrects only 19% of its syntactically unacceptable miscues. This group actually corrects a higher rate (16%) of its semantically acceptable miscues. The 2H group corrects 23% of its syntactically acceptable miscues and 15% of semantically acceptable ones. Both groups correct between 30 and 35% of miscues semantically and/or syntactically acceptable only with prior text.

The 2H group shows 33% of corrected and 15% of uncorrected miscues with no graphic proximity. It shows a higher percent (11%) of uncorrected than corrected (8%) miscues with low proximity and somewhat higher percents of uncorrected than corrected miscues with medium and high proximity. Group 4A shows 52% medium graphic proximity among uncorrected miscues as compared with 29% among corrected. Among the 4A group's corrected miscues, 20% have no proximity and 23% low, while for uncorrected miscues 8% have no proximity and 8% have low proximity.

These figures seem to show greater concern and success among 2H readers for correcting semantically and syntactically unacceptable miscues, and greater concern among 4A readers for correcting their smaller proportion of miscues with no and low graphic proximity.

The 2H group shows a comparatively relaxed attitude in their reading as compared to the more "up-tight" 4A readers. Their graphic and phonemic means are lower than 4A and other groups of readers except 2L and 4L. They are producing substitutions varying much more from the expected responses, particularly in the



graphic dimension, than 4A, but with greater semantic acceptability.

The 2H group also produces more syntactic change when their miscues are syntactically acceptable. This is another indication of the greater freedom of movement that 2H shows as compared to 4A. Semantic change is comparable for both groups.

The indicators in this comparison that the 2H readers are both more proficient and more liberated from concern for precise accurate response to the text may be a key to early and continued success in reading.

Other evidence for this conclusion comes from the transformation category. The 2H group shows more miscues involving transformation than the 4A group with more miscues which produce a different deep structure (2H, 62.3%; 4A, 44.8%). The 4A group has double the percent of lost deep structures (10.3%/4.4%). While the effect of dialect in producing transformations is stronger in 4A (5.6%/4%), the 2H group has 5.2% alternate options as compared to 4A's 2.4%.

A larger percent of 2H's miscues are omissions than are 4A's. More than 30% of 2H's noun, verb modifier and function word miscues are omissions while 4A omits only 7 to 13% in these categories. But these are not the "I don't know that word" kind of omissions which 2L and 4L readers show. They are incidental to getting the essential meaning.

#### Average Proficiency Fourth Graders: 4A

There are six readers in this group: three Black males, one White male, and two Black females.

A wide range of reading strategies are represented in this group. MPHW scores range from 6.75 to 12.06. Residual MPHW scores range from 2.18 to 9.44, though the low score is not made by the reader with the fewest miscues.

Correction percentages are equally varied. The 4A group ranges from 9.8% to 36%. Compared with other fourth grade groups, this is the lowest range of corrected miscues. It is important to consider, of course, the quality of those miscues both involved in and left of the correction process. As a rule, average groups tend to correct almost double the percentage of syntactically unacceptable miscues as fully acceptable ones. The 4A readers are an exception, correcting 18.9% of their fully acceptable miscues and 15.2% of their fully unacceptable miscues. Although the 4A subjects depart from the pattern with respect to the correction of fully acceptable and unacceptable miscues, they resemble other average and high groups in their tendency to correct a higher percent of miscues that are acceptable only with prior portions of the sentence than to correct miscues that are totally acceptable. Considering semantic acceptability, however, the 4A group is atypical.



Only this group corrects more fully semantically acceptable miscues (16%) than miscues that are semantically anomalous (12.8%).

The readers in the 4A group are more likely to regress and correct, however, than to make a miscue acceptable by accommodating the remaining portions of the text. Such accommodations do occur, however, as in these examples from the reading of subject 215:

"I'll fix a light and drop it to you <sup>thought he</sup> through the transom.

His sister<sup>s</sup> cries grew louder.

Freddie<sup>o</sup> <sup>tried</sup> trying to think, <sup>looking</sup> looked up at the small window...

These readers' graphic and phonemic proximity means (5.34 and 4.79) are similar to the means made by the other average groups in grades two through eight. The graphic range for the 4A readers is from 5.02 to 6.18, and the phonemic range is slightly lower, 4.33 to 5.93.

For the 4A readers, the range of syntactic acceptability is 47.8% to 64.2%. A reader with an extremely high percent of dialect miscues (35.2%) shows the highest syntactic acceptability (64.2%); this is partially due to our consistency in coding fully acceptable all those miscues due to dialect. Likewise, subject 217's semantic acceptability is the high for the group (56.6%). The semantic acceptability of the others ranges from 16.3% to 39.1%.

Graphic and phonemic proximity scores in many cases affect syntactic and semantic acceptability. For example, syntactic and semantic acceptability scores are frequently lowered due to inappropriate real word substitutions which have high graphic and phonemic proximity. When the reader attends more to sound-symbol relationships than to structure and to meaning, he produces miscues such as these produced by subject 216:

"What are you doing in the kitchen with <sup>he</sup> his <sup>nose</sup> those things?"

Sometimes it's <sup>horse</sup> worse.

These examples come from the reading of subject 212:

...he found the transom within easy <sup>each</sup> reach.

Uncle  
Once, however, he forgot himself.

High graphophonic similarity is often to be found in non-word substitutions, where the reader concentrates on graphic accuracy rather than meaning. Non-word substitutions for unfamiliar items usually preserve syntactic acceptability, but always damage semantic acceptability. The 4A group creates many non-words. Like more efficient readers, the members of the 4A group usually made only one attempt at any single occurrence of an item. They use successive occurrences as opportunities to gain new information. Subject 213, for example, makes these substitutions for the word experiment over five text occurrences:

ER	Text Occurrence	OR
experiment	1st occurrence	\$exmottter
	2nd occurrence	\$expumottter
	3rd occurrence	\$explanment
	4th occurrence	\$exploremment
	5th occurrence	explain

Subject 216 achieves some kind of record for his attempts on the name Elizabeth in fifteen different text occurrences, and never does arrive at any real name. Yet in six text occurrences of the word chemistry he finally does manage to correct:

ER	Text Occurrence	OR
chemistry	1st occurrence	word omission
	2nd occurrence	\$semicals
	3rd occurrence	\$semicals
	4th occurrence	\$semitry
	5th occurrence	chemist
	6th occurrence	@chemist

Word level substitutions with little or no graphophonic similarity, on the other hand, are often the result of a reader's concern for syntactic and semantic acceptability. Subject 211 uses syntactic and semantic, as well as graphophonic information, in making the following miscues:

"In the hall close<sup>terrifying</sup>!" came Elizabeth's tearful reply.

...Freddie said, in a serious voice.<sup>sorry</sup>

Sometimes it's worse to be badly frightened.<sup>forgotten</sup>

But he couldn't open the closet door either.<sup>enough</sup>

He found another battery, a ruler, a coil of copper  
wire...

He taped the wire tight...

It sounded like a fire siren...

It is due to high quality miscues such as those above that subject 211 appears to be one of the two most proficient readers in the 4A group. His comprehending score is 62%, second only to subject 217, with 69.8%. His percent of semantically acceptable scues (34%) in combination with the highest percentage in the group of miscues semantically unacceptable but corrected, account for this relatively high comprehending score, and relatively low residual MPH (2.57).

The other particularly proficient reader in the 4A group is subject 217, a reader with especially high dialect involvement. His comprehending score is the high for the group, 69.8%, compared to the group mean of 61.3%. This high comprehending score is not due to a high correction percentage (only 13.2% miscues semantically unacceptable but corrected). It is rather due to his high percent of semantically acceptable miscues (56.6%). As was previously mentioned, the obvious acceptability of dialect miscues helps to raise this figure. Most dialect miscues involve inflectional endings such as these examples from subject 217:

"You've wrecked that doll!"

...Freddie's chemistry experiments narrowed to those safely outlined in a library book.

"I'll keep this for a while."

Three readers, subjects 212, 215, and 216, achieve roughly similar semanti acceptability scores: 39.1%, 35.1%, and 34.4%. They make miscues which demonstrate their concern for meaning, such as these:

He picked up the small battery he had intended to use for his mother's bell.

"No," his mother replied.

Pulling the kitchen stepladder out onto the hall and  
climbed. He  
climbing up on it, he found the transom within easy  
reach.

All of them were living in Switzerland...

He heard a faint tapping...

Their correction percents are less similar (212, 14.1%; 215, 17.5%; 216, 31.3%). Subject 216 has a correspondingly high rate of correction of semantically unacceptable miscues, compared to the other two readers, and for this reason achieves a higher comprehending score (21.9% semantically unacceptable and corrected, 56.3% comprehending). Subject 215 performs better statistically than subject 212: his comprehending score is 50.9, due to 15.8% semantically unacceptable but corrected. Subject 212 corrects only 7.8% of his total miscues which are semantically unacceptable, and thus arrives at a comprehending score of 46.9%. Subject 212's syntactic acceptability score, however, is slightly higher than the other two subjects (59.4%, as compared to 50.9% for subject 215, and 53.1% for subject 216). He makes some quite acceptable miscues, both semantically and syntactically, but does less well in correcting when it is necessary.

Subject 213 neither greatly resembles the two more proficient readers nor the three more typical members of the 4A group. Both quantitatively and qualitatively, her miscues lead her to a lower comprehending score and a higher residual MPH. She makes more miscues than other 4A readers: her MPH is 12.06, as compared to the group mean of 8.61. She is able to reduce this to a residual MPH of 9.44, but the group mean is considerably below this: 4.46. While the mean comprehending score is 51.3%, her score is only 21.7%. This is due both to a low percentage of miscues semantically acceptable before correction (16.3%) and to a low percentage of miscues semantically unacceptable but corrected (5.4%). Her syntactic acceptability score, while the lowest for the group, is not much below the next lowest percentage, however: 47.8%. The problem seems to be that this reader's miscues cluster and complicate each other, to the extent that it is difficult for her to untangle the mess. The following sentences are exemplary:

After the cut in his allowance, Freddie's chemistry  
experiments narrowed to those safely outlined in a  
library book.

<sup>to matter</sup>  
<sup>queen of exmutter</sup> <sup>what</sup>  
"What queer experiment <sup>was</sup> it this time?"

<sup>nibbled</sup>  
Freddie nodded <sup>sadly</sup>.

<sup>scientist's</sup> <sup>has full</sup>  
Sometimes he thought that a scientist's life was filled  
<sup>departments</sup>  
with disappointments.

<sup>Known</sup> <sup>chisel</sup> <sup>scat</sup>  
None of the chemicals in his set was harmful or likely  
<sup>explore</sup>  
to explode.

<sup>He butter begin grow</sup>  
The bulb began to glow!

<sup>quiet tingle</sup>  
Such quick thinking!

Even this most unsuccessful reader of the 4A group shows concern for structure and for meaning, however. The problem is, of course, that she does not consistently apply this concern. The following miscues demonstrate subject 213's awareness of both syntax and semantic cues:

<sup>deaf</sup>  
It was enough to wake the dead.

"I'll get mother," he called to Elizabeth. He knew

<sup>sister</sup>  
this could become a serious matter.

<sup>the strange</sup>  
"Three o'clock!" Freddie said in a serious voice. "That

<sup>it</sup>  
can't be."

<sup>clock's working</sup>  
"Why, the clock works after all."

It should be mentioned that the text of story 51 is perhaps largely responsible for a number of miscues made by this group involving direct quotes. Subject 212 supplies these examples:

<sup>"5</sup> <sup>!"</sup>  
...and a voice calling somewhere above!"

Mr. Miller sighed <sup>said</sup> <sup>seriously, "Twinkling"</sup> "Seriously, Tinker, sometimes

I wish you didn't want to be a scientist.

In one such miscue subject 212 is able to accommodate for his miscue and produce an acceptable structure:

...then I'll get Mother. All right? Elizabeth <sup>stop</sup> stopped  
crying <sup>!"</sup>

Subject 211 produces just such an intonation miscue, one which also requires accommodation:

"I'll get Mother," he called to Elizabeth. <sup>"I know</sup> He knew

this could become a serious matter. <sup>"</sup>

The average fourth graders have a strong tendency to read for accurate word identification which schools have encouraged. Because of this focus, they are less efficient and effective than 2h readers of the same story. But there is still considerable variation among these readers in how easily and well they use the reading process.

#### High Proficiency Second Graders: 2H

The 2H group consists of five children, three White males, one White female, and one Oriental female.

One reader of this group appears less effective than the others: his syntactic and semantic acceptability are well below group means and the lowest of all group members: 41% syntactically acceptable, 31.1% semantically acceptable. Not a great deal of this unacceptability is corrected (21.3% of this subject's total miscues were semantically unacceptable and corrected), consequently his residual MPHW score looks much more like those of the 21A and the 2HA readers. Much of the unacceptability of subject 133's miscues stems from function word activity.

Freddie knew that Uncle Oscar must have been a <sup>the</sup> <sup>in</sup>  
terrible goody-goody.

After the cut <sup>a</sup> (in) his allowance...

...narrowed to those safely outlined in (a) library  
book.

"Three o'clock!" Freddie said (in a) serious voice.

That night Freddie dreamed that his teacher was talking  
of the  
(angrily) <sup>his</sup> to Father.

The first and last of these examples clearly show that the reader is using syntactic and semantic cues to predict both structure and meaning, but when his predictions don't turn out well, he fails to correct. The following three examples from this subject are also uncorrected, but they are fully acceptable and require no correction. Again, these miscues involve function words:

It  
That wasn't (the) school bell, ... <sup>bells</sup>

I'll fix a light and drop it to you. <sup>to in</sup>

While Freddie cleaned (out) the refrigerator...

This subject's unusual pattern could reflect a reluctance to correct overtly because this young reader thinks he's not supposed to. It could also be that he is a child who already is doing a lot of silent reading and whose oral reading is ragged because he can't change his pace comfortably.

Even taking subject 133 into consideration, however, there are many observations to be made about the 2H group. One of these is that all readers use graphophonic information to a moderate extent, but quite interestingly the 2H graphophonic means are lower than either the 2HA or the 2LA. Numerous miscues made by the 2H group are never examined for graphophonic proximity, however, because they are not word for word miscues but rather involved the phrase and clause level only. This comes as a result of the 2H readers being freer with the text, using fewer signals from each of the cueing systems to anticipate the author's structure and meaning.

One reader of this group is particularly free with the text, and he shows the second highest MPH of any group member (6.25). Yet the percent of his miscues semantically acceptable before correction is the second highest for the group (55.1%). Subject 131 does a great deal of inserting:

...when his parents discovered <sup>he</sup> who had fixed the alarm...

...it was enough to wake <sup>up</sup> the dead.

...a voice calling <sup>him</sup> somewhere above.

Mrs. Miller was getting <sup>his</sup> supper ready.

At times his insertions depart radically from the text, with a major editing job, maintaining total acceptability:

There ~~was an~~ <sup>place that</sup> The alarm went off at three o'clock in the morning.

...and then <sup>do you know what</sup> she said <sup>that</sup> something that made Freddie feel

fine all over.

The substitutions made by subject 131 often involve complex transforming, demonstrating his concern that it all make sense:

After the cut <sup>he</sup> (in) his allowance...

Yet by accident he (might) <sup>discovered</sup> discover a mixture...

Tacked a <sup>light;</sup> He taped the wire tight across the bottom of the end <sup>of the</sup>

battery

Subject 131 even manages to accommodate for his omission of two entire lines:

...I'm going to drop this light <sup>^</sup>

down to you through the transom. Catch it by the ruler

<sup>Now</sup> and let me know when you can reach it.

Now I'll (go)

get Mother. Both of us together can open the door. We'll

be back soon. Don't be afraid.





reader, and to a lesser extent of the group as a whole, that he does not correct many miscues which are already semantically acceptable:

Then she said something that <sup>to make</sup> made Freddie feel fine  
all over.

He  
"I was only washing the doll to make it look like  
new," Freddie explained.

Even more typical of the group is the tendency to leave uncorrected syntactically unacceptable miscues made in the process of predicting the following structure:

Uncle Oscar must <sup>be</sup> have been a terrible goody-goody.

"You what?" <sup>said</sup> Mr. Miller asked angrily.

...Uncle Maxmailian, who was a <sup>really</sup> real chemist...

This brief look at the 2H group through three of its readers indicates the variety of reading styles and strategies to be found among the 2H readers. With the single exception of subject 133, the members of the 2H group make miscues that are both syntactically and semantically more acceptable before correction than any of the other three second grade groups, and their MPHW and residual MPHW scores are lower. The sophistication of their complex grammatical transformations is notable, and indicative of their sensing that written English works like spoken English. Though concern for meaning is obvious in their substitutions, what remains inconsistent among the group members is their tendency to correct.

These young readers with two years or less of instruction, have the ability to use the reading process, selectively using and integrating available graphic, syntactic, and semantic cues. They are much like the other high groups as well as average groups above fourth grade in their ability to do so. They are more efficient and effective than average fourth graders who read the same story and are operating more successfully with the reading process than any of the low groups. Even the 10L group does not seem to have the process as much "together" as these high second graders.

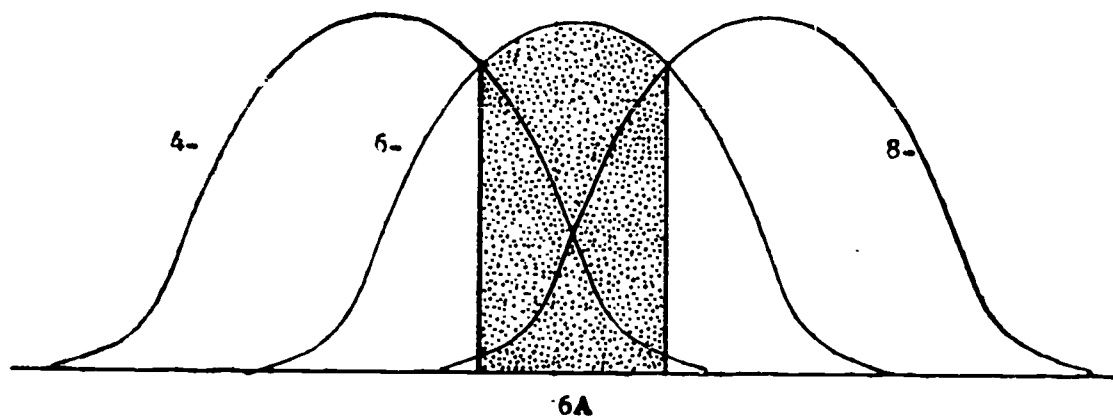
Groups 4H, 6A, and 8L Reading Story 53: My Brother is a Genius

These groups read a story from a sixth grade basal reader, "My Brother is a Genius". The story is, by the publisher's design, aimed at average sixth grade reading proficiency. One

might assume that high fourth grade, average sixth grade, and low eighth grade readers would include pupils whose reading proficiencies covered similar ranges, though the high fourth range might have a higher top and the low eighth range might have a lower bottom.

Figure 5-1

Expectation for 4H, 6A, 8L



The expectation might look like Figure 5-1 with a common area of proficiency representing the 6A range and the high tail of the fourth grade curve representing the additional 4H range and the low tail of the eighth grade curve representing the additional 8L range. This view assumes development which is relatively linear and a distribution of proficiency on the usual bell-shaped curve. It would lead to an expectation that the three groups would be similar with group average somewhat higher for 4H and somewhat lower for 8L. The data (see Table 5-3) shows a different pattern. The figures for the 4H and 6A groups are very comparable while the 8L group differs markedly and appears as a group to be considerably less proficient.

In MPHW the 8L range does not even overlap the other groups; it begins at 7.9 while 4H stops at 5.0 and 6A at 6.8. Mean MPHW for 4H and 6A are similar (3.6 and 4.2) while 8L is 11.3. Residual MPHW is: 4H - .88; 6A - 1.07; 8L - 5.95. Comprehension and comprehending are very similar for 4H and 6A, with 6A having slightly higher means, but 8L means are substantially lower. The 8L ranges only slightly overlap those of the 6A group and do not reach the bottom of the 4H group which has narrower ranges on both comprehension and comprehending than the 8L group.

Table 5-3

Comparative Data: 4H, 6A and 8L

Story 53

	4H		6A		8L		Mean:
	Range	Mean	Range	Mean	Range	Mean	
WPIW	2.1	3.6	1.2	4.2	7.9	11.3	
Comprehension	37.0	47.3	25.0	52.8	11.0	20.7	
Comprehending	68.0	76.5	57.6	79.6	34.1	49.5	
Semantic Acc.	42.0	55.0	48.5	65.4	28.1	37.9	
Syntactic Acc.	60.0	68.0	68.0	77.0	43.8	55.1	
Correction	24.0	37.6	15.2	28.0	6.2	15.3	
Graphic Mean	4.3	5.5	2.3	5.2	4.6	5.6	
Phonemic Mean	4.2	5.0	2.2	4.8	4.3	5.1	
Syntactic Change	6.8	7.0	7.4	7.5	7.5	7.6	
Semantic Change	6.7	7.1	6.9	7.6	7.1	7.4	
Residual WPIW	.38	.88	0.0	1.07	2.79	5.95	

In semantic and syntactic acceptability there is more spread between the means for 4H and 6A with 6A having the higher means. But 8L is still lower, particularly on semantic acceptability.

The highest mean for percent of correction is the 38% of the 4H group. Correction mean for 6A is 28%. But 8L as a group corrects only 15%.

Yet with these sharp differences the 8L group has very similar graphic and phonemic means to both 4H and 6A. The lowest means for all readers of story 53 come from a 6A reader; the highest come from an 8L reader. There is, then, as we've shown often elsewhere, no relationship between the notably lower proficiency of the 8L readers and their graphic and phonemic proximity scores. Ability to produce similar looking and/or sounding substitutions is not a lack in these less proficient readers.

On measures of syntactic and semantic change the 4H group has somewhat lower means indicating slightly higher degrees of change.

Table 5-4

Correction of Miscues on Story 53 With Varying Syntactic and Semantic Acceptability

Group		Not Accept.	Only Prior	Only After	Fully Accept.	% of all Miscues Corrected
4H	Syntactic Acc.	48.1%	66.7%	50 %	27	37.6%
	Semantic Acc.	30.9	63.9	47.1	27.4%	
6A	Syntactic Acc.	33.3	51.2	22.2	18.9	28.0
	Semantic Acc.	16.7	52.9	20.0	15.2	
8L	Syntactic Acc.	20.3	28.8	6.9	8.2	15.3
	Semantic Acc.	13.8	24.2	6.7	11.7	

All groups which read story 53 show considerably higher correction of syntactically unacceptable miscues than syntactically acceptable ones (see Table 5-4). On the other hand none of them show much greater rate of correction of semantically unacceptable than semantically acceptable miscues. The strongest tendency to correct for readers of story 53 comes with those partially syntactically and/or semantically acceptable with prior text. The 4H group corrects about 2/3 of such miscues while 8L corrects about 1/4 of these partially acceptable miscues, considerably more than the 15% they correct of all miscues.

The tendencies then for all groups are similar but proportionate to general success in use of correction strategies made by each group.

Correction by all groups also responds to some degree to phonemic and graphic proximity.

Ta.  
Correction and Graphic Proximity

Group		No	Low	Medium	High
8L	C	14.8	11.1	22.2	50.8
	NC	6.9	7.0	35.4	51.8
6A	C	17.1	17.2	22.8	41.8
	NC	7.7	6.0	34.2	52.8
4H	C	5.8	26.9	32.7	34.5
	NC	7.5	5.0	28.7	58.7

Table 5-6  
Correction and Phonemic Proximity

Group		No	Low	Medium	High
8L	C	22.2	14.8	22.2	40.7
	NC	13.1	5.3	30.7	50.8
6A	C	22.9	17.2	20.0	40.0
	NC	18.1	3.4	26.7	51.7
4H	C	26.9	9.5	32.6	30.8
	NC	11.2	1.2	33.7	53.8

Readers in group 4H show a strong tendency not to correct high graphic proximity miscues and a strong tendency to correct low graphic proximity miscues. Both 6A and 8L readers show higher percents of high and low graphic proximity among corrected miscues and higher percents of medium proximity ones among corrected. The 6A group shows a moderate preference for correction of high graphic proximity miscues.

The 4H group shows a strong tendency toward correction of miscues with no phonemic proximity. This tendency shows also more moderately in the other two groups. All groups show a similar high tendency to correct miscues with low phonemic proximity. There is a tendency not to correct high proximity phonemic miscues which is most pronounced in the 4H group. 6A and 8L groups tend to

correct medium phonemic proximity miscues.

Table 5-7

Transformations in Groups 4H, 6A and 8L

	None (0)	Different Deep Structure	Alternate Rules (2)	Alternate Options	Deep Structure Lost
4H	27.1	59.2	.7	7.5	5.5
6A	34.5	48.4	9.2	5.9	2.0
8L	30.6	53.3	8.9	.8	6.3

Transformation patterns are different in these groups than in the studies reported above. The 6A group has the lowest percent of miscues involving transformations but does not vary much from 4H and 8L. The 8L group does not in fact look markedly different from the other groups except in percent of alternate options, with less than 1% compared to 5.9 for 6A and 7.5 for 4H. The 4H group shows little dialect influence (alternate rules) while 6A and 8L show about 9%. The 8L group does not completely lose the deep structure as often as do low readers in lower grades. This group still produces a higher percent of syntactically fully unacceptable miscues (16.9), as compared to 4H (9.2) and 6A (5%).

This comparison shows average sixth and high fourth grade readers operating in comparable ways and with comparable efficiency while low eighth grade readers find the task more difficult as they show a quite different pattern with equal graphophonic strength, lesser ability to cope with syntactic information and considerably less ability to avoid loss of meaning.

The Low Proficiency Eighth Graders: 8L

The gap between low eighth grade readers and high eighth grade readers can be quite considerable. On reading achievement tests eighth graders are likely to show a spread of 10 to 12 years.

In selecting a story for our low eighth graders we were uncertain how low in graded material we would have to go to find a task of appropriate difficulty. We found that we could use story 53, My Brother is a Genius, the sixth grade story also read by 6A and 4H readers. Clearly, as the comparative data discussed above shows, the 8L group was not able to read with the same proficiency as the younger groups but the task was not a discouraging or defeating one. Harder tasks might have been overwhelming but easier ones would not necessarily have been read much differently. All of our eighth grade readers show ability to cope with the print, to respond orally to it, to get some minimum sense out of it.



The group consists of six Black subjects, three male and three female. The two students with lowest IQ scores (66, 70) appear to be the most proficient readers in the group. While the group MPHW mean is 10.21, these two readers show 7.53 and 7.25. Mean semantic acceptability for the group is 38%, these two show 53 and 45%. In comprehending score they are both above 60 while the group mean is 50%.

As a group, the 8L readers show no evidence of any phonics difficulties. The graphic and phonemic proximity means are as high or higher than the other eighth grade groups. Though they use graphic, syntactic and semantic cues, they show a tendency to rely heavily on graphic cues, sometimes losing meaning entirely. An extreme but not uncommon example is this sentence produced by subject 187:

OR I <sup>looked</sup> <sup>a crab</sup> patted  
ER I leaned over the crib, pointing a finger...

OR and stood silly  
ER ...at him and said, "Say da".

This does not show total disregard for syntax. In fact, notice how many of the substitutions retain their function. But the subject appears to give up on meaning and underlying structure. His syntactic acceptability is 54% but semantic acceptability is 26%.

These subjects all have some success with the syntax. Their mean syntactic acceptability is 55%. But they seem to be very much word bound, which is reflected in their producing some grammatical and meaningful sequences which only fit in the rest of the sentence.

OR His eyes were <sup>gripping</sup> <sup>wide</sup> glaring and wild.

OR Eleven  
ER "Eight months. But he's going on nine".

Excluding the two readers who seem to show greater proficiency, 168 and 186, the 8L readers seem resigned to not getting much sense from their reading. If they correct, the correction relates to parts of sentences and they may still lose the meaning of the whole because of other uncorrected miscues.

OR They impress my <sup>(C) meaning. But</sup> mind better that way.

All subjects in this group show dialect influences in their miscues. One type somewhat surprising in this age group is the super-correct form such as: lookeded, placeded, backeded, walkeded. This probably reflects teacher pressure.



The range of control on the reading process in this group is illustrated by the reading of this paragraph by two readers:

Subject 187

- 0201 So education it was! I opened the <sup>①</sup>dictionary- packed and picked
- 0202 out a word <sup>②</sup>world of that sounded good. <sup>Policy</sup>"Philosophical", I yelled.
- 0203 Might as well study word meanings <sup>③</sup>fast first. "Philosophical"
- 0204 showing calmness and courage in the face of ill <sup>slowly</sup>fortune. <sup>ca=iners a change</sup> <sup>foochun</sup>
- 0205 I mean I really yelled it. I <sup>④</sup>guess a fellow has to work off
- 0206 <sup>system</sup>steam once in a while.

Subject 186

- 0201 So education it was! I opened the dictionary and picked <sup>5 Pacific</sup> <sup>4 Pacific</sup> <sup>3 Pacific</sup> <sup>2 Pa-</sup> <sup>\* 1. Pa-</sup>
- 0202 out a word that sounded good. <sup>\*</sup>"Philosophical", I yelled.
- 0203 Might as well study word meanings <sup>words,</sup> first. <sup>1. Pacific 2. Pacificate</sup>"Philosophical"
- 0204 showing calmness and courage <sup>①</sup>in the face of ill fortune".
- 0205 I mean I really yelled it. I guess a fellow <sup>who</sup> has to work off
- 0206 steam once in a while.

Subject 187 makes a number of miscues. He corrects some but these corrections are immediate and he leaves many miscues which disrupt the meaning uncorrected. He tends to make a single attempt at unknown words. With "philosophical," which occurs frequently in the story, he tries the first time and omits it at each later occurrence. His miscues tend to compound their effect. Even though he corrects some the meaning is garbled by other miscues in the same unit.

Subject 186 is quite persistent at working out unknown words and garbled structures, frequently making several attempts. She is also high for the group with percent of correction (30%), double 187's rate of correction. She leaves some miscues uncorrected which disrupt meaning but still manages 65% comprehending score as compared to 186's 40%. Both have similar syntactic acceptability, about 55%, which is also the group norm. What chiefly distinguishes 186 as compared to 187 is a greater concern for meaning and the persistence noted above to use correction strategies.

She makes substitutions that reveal her meaning concerns:

OR <sup>(c)</sup> I dis-  
ER It won't disrupt me! OR smoothing  
ER a soothing sound

OR <sup>2 laid</sup>  
ER I leaned on the (baby) bed. <sup>3 growled</sup>

OR Barkly <sup>2. gr-</sup>  
ER Mr. Barnaby frowned and glared at me. <sup>1. gr-</sup>

OR  
ER Andrew isn't an orderly ordinary baby...

OR Barkly struggled <sup>(c) in</sup>  
ER Mr. Barnaby slumped into a chair...

One reader, subject 167, has a tendency to sample graphic cues and create structures quite unlike the ERs:

OR thought I didn't serve the  
ER "...though I'm not sure he needs one."

OR Barberly followed the ground  
ER Mr. Barnaby frowned and glared at me...

OR But he prayed  
ER There was pride in her voice.

This is a tendency noted in younger readers. Whether it represents a new awareness of meaning in this subject which could lead to more effective reading or a long term non-productive strategy cannot be determined from this one time reading.

The overall picture of the more typical 8L readers is one in which all elements of the process are present. They lack no specific or general skills. Rather they lack the competence to bring it all together into a successful construction of meaning. They have some useful strategies but frequently are unable to use them consistently. They may overuse graphic information either because they lose meaning or they've been taught to emphasize accuracy.

#### High Proficiency Fourth Graders: 4H

The 4H readers probably represent the high water mark in terms of successful readers trying to please both themselves and their teachers. They read with relatively low MPHW (2.06 - 5.00). Their miscues have moderately high semantic acceptability (42 - 66%). Residual MPHW is quite low (.38 - 1.53) with mean of .88. This last is due in part to a very strong tendency to correct miscues of all kinds. They range in correction from 24 to 48%. Group mean is 38% correction, highest for any group. They correct many miscues which are fully acceptable semantically.

Clearly the 4H group is seeking meaning but clearly also they try to be accurate. They may be beginning to suffer from lowered effectiveness as a result of this concern for accuracy. Comprehending score ranges from 68 to 81% with a mean of 77%.

The 4H group consists of two Black males, two White males and two White females.

As we indicated above the 4H group is much like the 6A group in reading this story and very much more successful than the 8L group. But 6A makes better miscues while 4H's concern for accuracy causes correction of enough miscues to bring its comprehending percent close to that of the 6H group. Both groups are effective readers of this story but 6A is more efficient; they expend less effort.

Though there are differences among the readers in the 4H group on any variable, no individual is consistently different from the others. No one is really atypical on either the high or low side in his overall profile; everyone belongs in this group.

The 4H readers produce many graphemically close miscues that are pronoun substitutions and are usually corrected if there is no syntactic fit:

I never thought <sup>(c)</sup>we he was...

We could put it <sup>(c)</sup>in on between nine and ten on Thursdays.

...when <sup>(c)</sup>he we were almost ready...

He helped <sup>(c)</sup>me my mother with...

A good many of their single graphemically different miscues involve bound morphemes:

...choose a baby for your TV program<sup>(s)</sup>

...study <sup>(c)</sup>word<sup>s</sup> meanings first.

A baby like everyone <sup>(c)</sup>else<sup>s</sup> baby

...there isn't anything you <sup>(c)</sup>can<sup>s</sup> can't say or do...

In this subgroup, subject 261 has the highest percent of close graphemic and phonemic proximity miscues. For this reader, substitution of non-words account for the majority of these close proximity miscues:

<sup>Impression</sup>  
...favorable impression...

<sup>Definitions</sup>  
...word definitions...

<sup>Clearly & distinctly</sup>  
Clearly and distinctly...

<sup>In = Intellectual</sup>  
"Intellectual?..."

<sup>distinctly</sup>  
<sup>quiver</sup>  
...was a distinct quiver in his voice.

<sup>broadly</sup>  
...smiling broadly.

For most non-word substitutions, subject 261 makes one stab at the text item; on the basis of syntactical and visual information he produces a non-word, retaining intonation and inflection for the same grammatical function. This particular strategy is employed by most of the 4H readers when they encounter unfamiliar words. They waste little time or effort on unknown words, rather, they produce non-words and keep moving. Only 7.1% of their non-word miscues are corrected (see Table 4-7). On the other hand, the 8L readers, on the same words, often perseverere to the point of breaking their train of thought and losing their feel for syntax. Apparently, on the basis of comprehension means (4H: 47.3; 8L: 20.7) the 4H's quick nonword substitutions are far less disruptive of meaning than the 8L's perseverence.

The 4H readers have a relatively high percent (59.2) of grammatical transformation miscues which involve a difference in deep structure between the ER and OR. Among the 4H readers the range of such transformations is narrow (56.2 to 64%), that is, they all have a tendency to make such syntactic alterations. Many of these changes are evidence of the reader's ability to predict and produce grammatical structure that is acceptable in the passage, even if it is not identical to the author's structure. Many such substitutions involve tense or number changes. For example:

<sup>will</sup>  
My idea would be for you...

<sup>knew</sup>  
...if you know how to think...

I remember the camera<sup>s</sup> moving...

...hanging up the <sup>two</sup> telephones<sup>s</sup>...

...as soon as <sup>This</sup> ~~classes~~ let out...

...I ~~called~~ the local television station.

Other transformations involve omissions of embedded adjectives, and insertions and omissions of function words:

...along one ~~whole~~ side...

...my ~~little~~ brother said...

He threw his arms high and let them <sup>all</sup> ~~fall~~ limply on his lap.

~~But~~ by then the program was over.

...clear <sup>in of</sup> ~~to~~ the front door.

...you may have hit ~~on~~ a gold mine.

In general, miscues appear to improve in quality as reading progresses; there is a greater tendency to accommodate for miscues rather than to regress.

I <sup>said</sup> opened ~~it to~~ the S's.

A <sup>more like</sup> ~~like~~ everyone else's baby

Bring that fine boy over <sup>the</sup> ~~here~~ ~~right~~ ~~away~~

There <sup>was a</sup> ~~were~~ glaring spotlight~~s~~.

There <sup>were</sup> ~~two~~ men ~~were~~ signaling to each other.

Is there <sup>the</sup> ~~a~~ dictionary here?

In most of the examples given above it would appear that the 4H readers have a proclivity for correcting only those miscues that need correction. However, as we said earlier this is not the entire

picture. These readers correct more miscues and use more partials than readers in any other group (see Figure 3-14). They appear to be often uncomfortable with less than a perfect rendition of the text. This could be justified if the miscues are semantically counter productive. But, this is not always the case (see Table 4-5). These readers correct more miscues that are fully semantically acceptable (27.4%) than do readers in any other subgroup. Subject 257 is at the top of the 4A range of correction of fully syntactically and semantically acceptable miscues. Following are some examples made by subject 257. They are characteristic of the entire group.

I mean <sup>(c)</sup> (I) <sup>real-</sup> really yelled it.

...during the <sup>(c)</sup> television televised program.

...plan something interesting <sup>(c)</sup> 2 or 1 or and original.

"I'm <sup>(c)</sup> a (very) busy man,"...

"As <sup>(c)</sup> little <sup>b-</sup> brother: go."

<sup>(c)</sup> (Well) <sup>m-</sup> my idea would be...

<sup>(c)</sup> (And) <sup>s-</sup> so you could just pick my little brother".

<sup>(c)</sup> "But (what) if he cries or something?"

Andrew <sup>(c)</sup> (had) made...

<sup>(c)</sup> Andrew  
"Andrew isn't typical!"

Even though 65% of these structures are acceptable syntactically in the total passage, the 4H's correct them at the high rate of 27.9%. When the structures are syntactically acceptable with the last part of the sentence (5.5%) there is 50% correction and when they are acceptable with the first part of the sentence there is an exceptionally high percent of correction (66.7%). Compared with other readers, these 4H subjects are greatly concerned with exactness.

Although these readers make many miscues that involve structural transformations, they produce very few miscues that are generated by use of alternate rules or by compulsory rule shifts.

This is to be expected, considering their lack of dialect involvement.

Possibly the 4H subjects are representative of "the nicest kids in school." They aim to please and are the teacher's delight. Possibly too, they are representative of the peak in reading development of an uptight - get it right attitude. They are kids who are concerned with giving an accurate performance. Indicative of their concern for exactness is (1) their low MPH, (2) their high percent of corrections and partials, (3) their avoidance of using their own dialect in their oral reading (there are no dialect miscues for any of the six readers).

Actually the quest for accuracy does not produce a letter-perfect performance; these readers leave many graphic mismatches. They also do a fair amount of synonym substituting. Rather, they achieve a high degree of syntactic correctness. Their concern for accuracy does not overwhelm their concern for meaning. They sometimes grammatically restructure, while maintaining meaning.

But these readers seem to have gone about as far as they can with the attempt to read accurately with high comprehension. Their correction of miscues which do not disrupt meaning shows an inefficient processing of information not essential to the production of meaning. As we will see relatively proficient readers in the higher grades are mainly distinguished by the high rate of semantic acceptability of their miscues. This, combined with a decline in MPH, produces reading which is both efficient and effective. One might argue that the lowered MPH in upper grades shows concern for accurate reading. The quality of the miscues produced suggests, however, that such apparent accuracy is the result of efficient information processing rather than an essential of effective reading.

#### Average Proficiency Sixth Graders: 6A

This group is made up of two Black females, one White female, two White males and one Black male.

Although, for most variables, the ranges for these subjects are not as extensive as those for other average groups (i.e., 8A), individuality is evident on close inspection.

For 6A readers, MPH ranges from 1.19 (subject 218) to 6.81 (subject 224). Subject 218 has extremely low graphic and phonemic means (2.33 and 2.22) while subject 224 has a graphic mean of 6.49 and the highest phonemic mean in the 6A group, 5.97. The highest syntactic and semantic proximity means are also made by subject 224 in a group ranging from 6.85 to 8.10 (syntactic) and from 6.93 to 8.16 (semantic). Subject 224 has the lowest percent (48.5) of semantically acceptable miscues. He corrects fewer miscues (15.2%), and it follows that his comprehending score (57.6%) is the lowest for the group and that his residual MPH is



highest for the group. His comprehension score (also the lowest for the group), is additional evidence that subject 224 is the least proficient reader in the 6A group.

Subject 218 represents the other end of the scale. As mentioned earlier, this reader has the lowest graphic and phonemic proximity means. He is more concerned with the salient aspects of meaning than with making a graphic or phonemic match.

I opened <sup>my</sup> the dictionary

I went on reading the words <sup>out loud</sup> aloud.

I read a lot of them outloud nearly every <sup>day</sup> evening.

I said as <sup>loudly</sup> calmly as I could...

His voice was swallowed up <sup>by</sup> in a loud blare...

This subject's miscues are semantically and syntactically acceptable 84% of the time. He corrects 48% of his miscues including all that need correction; his comprehending score is 100 and his residual MPHW is 0. He is the only reader in our study to achieve this zero residual MPHW.

For most of the variables measured, the other readers in the group fall somewhere between these subjects (118 and 224). The remaining readers look enough alike so that some generalizations can be made concerning their overall reading proficiency.

All of the readers (with the exception of 218) have a large percent (30.2% - 42.6%) of their miscues involving single graphic differences. A comparison might be made here with the 6L readers who also have similar visual cueing patterns. In contrast to the less proficient 6L readers, however, the miscues made by the 6A subjects usually result in syntactically acceptable structures with meaning maintained. In the examples below, notice that correction is unnecessary, ergo these more efficient readers don't waste time and effort doing so.

ER Might as well study word <sup>meaning</sup> meanings first.

ER I leaned on the <sup>baby's</sup> baby bed.

ER "Savage: wild; not <sup>tame</sup> tamed.



ER The baby <sup>would</sup> could advertise things,...

ER I guess a fellow has to work off <sup>a</sup> steam...

ER ...as <sup>the</sup> classes <sup>left</sup> let out for lunch...  
(This example must be considered in light of the reader's dialect. In this case left out is an expression equivalent to let out.)

These readers correct 22.3% of their miscues involving graphic changes and, for the most part, use their correction strategies efficiently, that is, only when corrections are needed.

ER <sup>(c)</sup> It <sup>(s)</sup> just three blocks...

ER <sup>(c)</sup> We could take some <sup>talk</sup> moving <sup>movie</sup> pictures...

ER ...blare of "Rock-a-by Baby," <sup>(c)</sup> which <sup>while</sup> woke Andrew...

ER ...just smart enough to <sup>(c)</sup> <sup>plane</sup> plan something...

The examples above are evidence of the ability of these readers to use effectively all the language's subsystems. They can use graphic and phonemic information without being overwhelmed or misled by it.

Of all average groups the 6A readers have the highest percent of syntactically (77%) and semantically (66%) acceptable miscues. They also rank higher than the 6H and 8H61 on these two variables. The 10HA60's slightly surpass them on syntactic acceptability (79%). The majority of their miscues are syntactically acceptable in the entire passage (range: 68% - 84%). Even the least proficient reader (224) has 75% total syntactic acceptability. In his case we must look at what he does with the remaining 25%. As opposed to the other readers in this group, subject 224 has 10.6% miscues that are totally syntactically disruptive. The most proficient reader (218) produces no syntactically unacceptable miscues. The remaining 6A readers again range between subjects 218 and 224 (1.7% to 6% syntactically unacceptable).

Further evidence of their proficiency is their ability to recognize syntactically unacceptable structures and to correct such structures.

<sup>(c)</sup> Not  
New, but not crazy...

(c) I couldn't (help) feeling proud.

(c) we've  
We've got to call...

(c)  
...when he should (be) sleeping,...

(c) Mr Fa..  
My father was...

(c) Where can I see this baby brother of yours?

(c) how  
I don't know about that, but I know...

Contrast the above examples with those made by the least efficient 6A reader (224) who is sometimes willing to allow unacceptable syntactic and/or semantic structures to go uncorrected.

It's  
In a little while he was (sleep) asleep.

words define  
...to remember the word definitions if I read them...

Then ever  
They might even refuse to buy...

and  
I called the local television station (and) It's just  
three blocks from the school.

One text construction which many readers are willing to leave uncorrected is found in the first sentence of the story and involves peripheral field cueing.

MY BROTHER IS A GENIUS

brothers  
...if it bothers you to think of it as baby sitting...

Of the three 6A readers who miscued in this context, two did not correct and one corrected before the entire word was uttered.

(c) bro\_  
If it bothers...

This particular substitution (brothers for bothers) is often left uncorrected even by good readers. At this initial point in

the text the reader cannot make a good prediction because he has not received enough syntactic and semantic information, consequently he is misled by the peripheral field and graphic cueing.

The majority (68%) of the miscues at the word level involves substitutions. The text word and the substituted word are usually of the same grammatical function. These substitutions have meaning and they are usually uncorrected. The following miscues are illustrative:

...strong <sup>and</sup> or powerful.

...take pictures of him when he's at his best. <sup>while</sup>

Andrew had made a very favorable <sup>good</sup> impression

"Philosophical?" I <sup>said</sup> asked

Andrew's eyes <sup>dropped</sup> drooped

You <sup>didn't</sup> don't have to be a genius.

"Get that baby over here!" <sup>the</sup>

It's just three blocks from the school... <sup>my</sup>

...pointing at me. <sup>to</sup>

First <sup>Mrs</sup> "Front office. Miss Brown," he said, staring at <sup>door</sup> the floor.

The 6A readers seldom omit unknown words, rather they substitute real words or nonwords.

Wouldn't want to <sup>imperial</sup> imperil our good will...

...a little foolish and <sup>fasharm</sup> ashamed...

I started to read. <sup>siy</sup> "Sleigh, snow, soak, <sup>sosety</sup> society... <sup>so-</sup>

Apparently such substitutions do not seriously disrupt the overall meaning for the readers. Much evidence to support this hypothesis is provided by three of the subjects who substituted tropical, topical and \$trapezoidal for the word typical. This word appears thirteen times in the story and conceptual meaning is built by the story's context. During the retelling of the story, the readers indicate that they understand the meaning of typical baby.

Subject 220: He (Mr. Barnaby) wanted a topical baby.

Interviewer: What is a "topical" baby?

Subject 220: A plain old ordinary baby. He (Andrew) wasn't no ordinary baby. He could say those big words.

When these subjects insert, (7.9%) or omit (15.4%) words, the miscues usually result in language that is natural and meaningful for the reader.

...it helps me to remember the word definitions

if I <sup>(can)</sup> read them out loud.

As <sup>a</sup> little brother <sup>goes</sup> go.

...he said, "You (may) have an idea of value".

A baby like everyone else (s) (baby)

...but (what) if he cries or something?"

...you have hit (on) a gold mine...

He seemed to like (the) history lessons, too.

He looked helplessly at <sup>the</sup> first (one) cameraman and...

...the most original outside project <sup>of the</sup> this year...

The 6A "group" should be living proof of the need to "degroup" for classroom reading instruction. Subject 224 on this harder story looks more like the 6L readers (and there is so much individuality in that group that one would be hard put to find cause for calling all of them Red Birds). Subject 218 is a highly

efficient reader and he needs to be exposed to a wide variety of reading materials.

These are competent readers, using language information and personal background concepts proficiently. This becomes evident in an analysis of their oral reading performance as well as in their retelling of the story.

Groups 6H, 8A, and 10L Reading Story 59: Sheep Dog

Sheep Dog, story 59 is a story from an eighth grade literature anthology. The setting is a mountain valley and the story centers on a workdog's defense of a herd of sheep against coyotes. The three groups reading this story represent a comparable spread to those reading story 53, but shifted up two grades. The low group is very low indeed, all showing below the 10th percentile on the CAT Reading Test.

The patterns shown by the miscues of these groups are very similar to those shown in the three groups just discussed (see Table 5-8).

The 6H and 8A groups are similar in MPH (4.0 and 5.0) but 10L shows a mean of 10.3 MPH, more than double. Residual MPH is 6H, 1.78; 8A, 1.88; and 10L, 6.52.

In both comprehending and comprehension, 8A is highest with 10L appreciably lower on both. The 8A group is also top in syntactic and semantic acceptability. However there is far less spread in syntactic acceptability and 10L reaches 60.5% mean; they handle the syntax much better than the meaning.

This story was a relatively more difficult task for these groups than story 53 was for the groups reading it. The gap between syntactic and semantic acceptability is the best indicator of that. For all three groups, semantic acceptability is considerably lower than syntactic. Another indication is the lower comprehending means these groups show.

In this comparison there is more range in percent of correction within than between groups and means are quite similar.

Graphic and phonemic means show no notable differences among groups. Neither do means for syntactic and semantic change in acceptable miscues.

Marked differences show between groups in which miscues they correct.

The 10L readers correct only 7.3% of syntactically fully unacceptable miscues, while 8A corrects 47.4 and 6H corrects 43.8%. 6H and 8A readers also correct higher percent of miscues partially syntactically acceptable.

Table 5-3

Comparative Data: 6H, 8A and 10L  
Story 59

	6H		8A		10L	
	Range	Mean	Range	Mean	Range	Mean
MPHW	2.7	4.9	1.1	9.2	3.6	13.9
Comprehension	10.	33.0	17.	82.	15.	17.4
Comprehending	42.5	57.6	44.4	81.3	28.6	42.0
Semantic Acc.	21.7	40.5	29.2	66.3	20.5	31.3
Syntactic Acc.	50.9	65.6	53.8	81.8	50.9	60.5
Correction	13.1	16.5	6.3	27.5	4.1	16.5
Graphic Mean	4.7	5.5	4.8	5.6	5.2	5.7
Phonemic Mean	4.2	5.1	4.5	6.1	4.8	5.3
Syntactic Change	7.3	7.7	6.8	8.1	7.4	8.0
Semantic Change	6.7	7.3	6.6	7.4	6.6	7.4
Residual MPHW	.57	1.78	.39	5.12	.82	6.52
						8.39

Differences exist in correction of semantically fully unacceptable miscues, but they are smaller. The 10L group again corrects 7.3%, 6H corrects 22.6% and 8A corrects 21%. Both 6H and 8A correct about 32% of miscues only semantically acceptable with prior while 10L has its best success, 24.4% correction, with those.

Both 6H and 8A readers tend not to correct high graphic proximity miscues while 10L readers have a slight tendency to correct them.

The 10L group has 13.5% miscues involving transformations influenced by dialect, as compared to 3.3% for 6H and 1.4% for 8A. Only 3.4% of 10L miscues involve transformations to alternate optional surface structure, while 6H has 6.8% and 8A has 11.2%. Lost deep structure is involved in 7.2% of the 10L miscues, compared to 8A, 5.2%; 6H, 1%. But 10L on this story like 8L on story 53, does not have the high percent of miscues involving lost deep structure found in lower grade low groups.

The 10L group has 11.2% syntactically fully unacceptable miscues (double the percent for 8A and 6H).

All three groups show similar tendencies to substitute within grammatical categories.

This comparison indicates the extent to which a particular task of relative difficulty can flatten out some of the differences between groups of differing proficiency. Since the 10L group also read story 61, we are able to see how its performance on a task of considerably greater difficulty looks. MPH is higher (13.2) while comprehending, semantic and syntactic acceptability and correction are lower. Graphic and phonemic means are slightly higher.

Correlations among Readers of Stories 53 and 59. Table 5-9 shows significant Pearson Correlations for the readers of story 59. Comprehending correlates (.49) with comprehension rating for these readers. The major factor in comprehending is semantic acceptability. The two correlate (.93). There is a .86 correlation with syntactic acceptability. Comprehending also correlates with percent corrected (.54) but not with percent semantically unacceptable but corrected. There is a negative correlation for comprehending with MPH (-.41). Quality and quantity are inversely related.

Comprehension correlates positively with syntactic (.65) and semantic (.55) acceptability.

Correction percentage correlates positively with percent semantically acceptable but corrected (.91) and negatively with graphic proximity (-.48).

Semantic and syntactic acceptability have a .92 correlation. They correlate with comprehending (.93, .86) and comprehension positively (.55, .65).

Table 5-9  
 Significant Pearson Correlations For  
 Story 59

	sig. <sup>r</sup>	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	NS	NS	.55 .02	NS	NS	NS	.49 .05	.65 .004	NS
GRAPHIC PROXIMITY			.84 .001	-.48 .05	NS	-.49 .05	.60 .01	NS	NS	NS	NS
PHONEMIC PROXIMITY				NS	NS	-.41 .10	.64 .006	NS	NS	NS	NS
% CORRECTED					NS	.91 .001	NS	NS	.54 .83	NS	NS
SEMANTIC ACCEPTABILITY						NS	NS	NS	.93 .001	.92 .001	NS
SEMANTICALLY UNACCEPT. BUT CORRECTED							NS	NS	NS	NS	NS
SYNTACTIC PROXIMITY								.64 .06	NS	NS	NS
M.P.H.W.									-.41 .10	NS	NS
COMPREHENDING										.86 .001	NS
SYNTACTIC ACCEPTABILITY											NS



Graphic and phonemic proximities correlate positively (.84) and both correlate with syntactic proximity (.60, .64). Both correlate negatively with percent semantically acceptable but corrected (-.49, -.41) suggesting that there is a tendency for those with higher surface accuracy in this group not to correct miscues which cause loss of meaning.

Table 5-10 shows the correlations which are significant for story 53.

Comprehending shows a positive correlation with comprehension (.71), semantic acceptability (.92), syntactic acceptability (.70), percent correct (.74) and percent semantically unacceptable but corrected (.47). There is a high negative correlation with MPHW (-.94).

Comprehension also shows significant positive correlations with semantic acceptability (.70), syntactic acceptability (.55) and percent correct (.55) and shows negative correlations with MPHW (-.70).

Percent corrected has additional positive correlations at significant levels with semantic acceptability (.49) and percent semantically unacceptable but corrected (.78), and has negative correlations with syntactic proximity (-.63) and MPHW (-.86).

Semantic and syntactic acceptability have an  $r$  of .83. They have high negative correlations with MPHW (-.83, -.72).

Graphic and phonemic proximity have an  $r$  of .97 but no other significant correlations. Syntactic proximity, on the other hand, shows negative correlations in addition to those cited above with semantically unacceptable but corrected (-.77) and MPHW (-.52).

Using the same task to look across grade levels at readers of successively lower proficiency shows some interesting relationships.

With an eighth grade story (59) and average eighth graders as the middle group there is a moderate negative correlation with MPHW (-.53). This figure is much higher for the groups reading the sixth grade story with average sixth grade readers as the middle group (-.91). A moderate correlation .49 between comprehension and comprehending for readers of the eighth grade story compares to .71 for readers of the sixth grade story. Comprehension has very similar  $r$ 's with semantic acceptability and syntactic acceptability for both sets of readers. Both groups show high input of semantic acceptability to comprehending, but the readers of the sixth grade story show a lower  $r$  between comprehending and syntactic acceptability (.70 as compared to .86).

Percent correct shows fewer significant correlations for the readers of the eighth grade story.

Table 5-10

Significant Pearson Correlations For  
Story 53

	sig. <sup>H</sup>	GRAPHIC PROXIMITY	PHONEMIC PROXIMITY	% CORRECTED	SEMANTIC ACCEPTABILITY	SEMANTICALLY UNACCEPT. & CORRECTED	SYNTACTIC PROXIMITY	M.P.H.W.	COMPREHENDING	SYNTACTIC ACCEPTABILITY	SEMANTIC PROXIMITY
COMPREHENSION	NS	NS	.55 .016	.70 .001	NS	NS	NS	-.70 .001	.71 .001	.55 .02	NS
GRAPHIC PROXIMITY			.97 .001	NS	NS	NS	NS	NS	NS	NS	NS
PHONEMIC PROXIMITY				NS	NS	NS	NS	NS	NS	NS	NS
% CORRECTED					.49 .04	.78 .001	-.63 .004	-.80 .001	.74 .001	NS	NS
SEMANTIC ACCEPTABILITY						NS	NS	-.83 .001	.92 .001	.83 .001	NS
SEMANTICALLY UNACCEPT. BUT CORRECTED							-.77 .001	-.52 .03	.47 .05	NS	.42 .08
SYNTACTIC PROXIMITY								.46 .05	-.41 .09	NS	.42 .08
M.P.H.W.									-.94 .001	-.72 .001	NS
COMPREHENDING										.70 .001	NS
SYNTACTIC ACCEPTABILITY											NS

### Low Proficiency Tenth Graders: 10L

The 10L group, like other tenth grade groups, read two selections of varying difficulty. Like the 8H, 10LA, 10HA, and 10H groups, the 10L group read story 61, a complicated essay from Look Magazine entitled "Why We Need a Generation Gap." Unlike the other tenth graders, however, the 10L group did not read story 60, "Poison", but rather story 59, "Sheep Dog", as reported above. Story 59 is much longer than story 61, but is considerably easier to read. A comparison of the 10L group's performance on the two tasks is provided in the various sections of Chapters 2 and 4. The present chapter is not specifically concerned with such a comparison.

The 10L group consists of five subjects, two Black males and three Black females. One male subject, 233, has the top score of 110 on the California Test of Mental Maturities. One female subject, 236, is low for the group with 62 on the same test.

In general, subject 233 outperforms others in his group. His MPH<sub>W</sub> on story 59 is 4.44; the other four subjects range from 11.38 to 15.38 MPH<sub>W</sub>. His tendency to correct semantically unacceptable miscues exceeds that of other 10L readers: On story 59 he shows 25.3% miscues semantically unacceptable but corrected, while others range from 2.3% to 11.5%. His comprehending score is more than double that of the next highest subject: 77.2%, others range from 28.6% to 37.9% on story 59. Subject 233, then, while sharing many of the reading strategies used by other 10L readers, is not representative of the group.

All readers in this group have a higher MPH<sub>W</sub> for story 61 than for story 59, as is typical of the groups who read story 61 and 60. The group mean MPH<sub>W</sub> on 59 is 10.26; on 61 it is 13.18. In spite of lower MPH<sub>W</sub> scores, other tenth grade groups jumped approximately this much as well, with the exception of the 10H group, which moved only from 2.13 MPH<sub>W</sub> to 2.98.

The residual MPH<sub>W</sub> scores of the 10L readers are also raised considerably by the harder task. The group mean is 6.52 for 59, as compared to 10.56 for 61. One reader, subject 236, actually decreases her MPH<sub>W</sub> in the more difficult story from 10.8 to 10.56, but her residual MPH<sub>W</sub> increases somewhat (7.44 on 59 to 8.88 on 61). Clearly, the 10L group is more affected by the more complicated reading selection than were other more proficient groups.

All 10L subjects show no problems in use of graphophonic information. The graphic mean for the group (story 59) is 5.71; the phonemic mean is 5.32. One subject, 236, pays slightly more attention to graphic information than do most readers: her graphic and phonemic means are 6.7 and 6.11, respectively. Yet this same reader's concern for graphic detail does not aid her in correcting semantically unacceptable miscues. On story 59, only 2.3% of her miscues are semantically unacceptable but corrected; on story 61, this

drops to 1.2%. The group correction means are 10.8% (59) and 8.34% (61). Clearly, this subject's ability to get meaning is far below her ability to handle graphic detail. Subject 10 demonstrates her loss of meaning in the following sentence, in which none of her miscues are corrected.

Two burros, their long <sup>grays</sup> gray ears <sup>standing</sup> sagging in  
<sup>drakness</sup> drowsiness, stood <sup>saultenly</sup> solidly in the midst of the  
 sheep.

One of the reasons why this reader shows slightly higher than average graphic and phonemic means is that she is in fact, concerned about syntax. Her word level substitutions are often virtually meaningless, yet they retain the grammatical functions of the ER through inflections:

OR	standing	drakness	saultenly
ER	sagging	drowsiness	solidly

Syntactic acceptability for the 10L group is quite different for the two stories they read. The group mean for syntactic acceptability on 59 is 60.48%; the range is from 50.9% to 73.4%. On the more difficult selection, however, the group mean is almost 20% less: 42.66%. The range, however, is from 28.2% syntactic acceptability to 40.2%, with one exceptional reader, subject 233 again, achieving 76% syntactic acceptability. Although subject 233 stands out from the group in terms of MPMW, correction, and syntactic and semantic acceptability, all 10L subjects look remarkably similar in terms of syntactic and semantic change. All those miscues coded syntactically acceptable are also coded for syntactic proximity: the group mean is 8.00 on story 59, 8.40 on story 61. Just as the more difficult story causes the syntactic proximity mean to go up, so it causes the semantic proximity mean to go down somewhat: 7.44 on story 59, 7.19 on story 61. Although this group makes a great many more syntactically and semantically unacceptable miscues than average or high tenth grade groups, those miscues which are acceptable are no more changed than the acceptable miscues of any other tenth grade group.

Two readers in the 10L group are of particular interest. Subject 232, a Black female, is quite typical of the group in her tendency to substitute non-words for items unfamiliar to her.

<sup>dissentions</sup> Young dissidents have been widely <sup>beritted</sup> berated for  
<sup>alternym</sup> lacking an alternative...

She also omits unknown words, a reaction which occurs much more frequently among younger readers:

<sup>accumulating</sup>  
...acculturating in a sea of baby food, weed killer,

and convertible debentures

She is also capable of omitting the entire end of a sentence, if it looks too overwhelming:

...this senseless, <sup>fiscal</sup> futile debate between the

(obstetrician and the mortician will end)

Proper names are a particular source of difficulty as they are with other readers in this group:

...when the new FBI director catches (Eldridge Cleaver)...

I suspect they might demand with (Kurt Vonnegut) that...

Occasionally this reader just says, "Oh, something", when she encounters a difficult word, making no attempt at it at all.

It is the substitutions made by subject 232, however, which are particularly intriguing, since they include so many a: 'ms:

ER

OR

hopefully  
east  
roughly  
without  
occasionally  
hesitating  
savagely

hopelessly (2 occurrences)  
west  
smoothly  
with  
consistently  
hastily  
sacredly

This reader makes other miscues which are pessimistic and depressing.

...a man twice my age who expressed great faith in the

failure  
future of American youth...

...force the young to stop fighting for a future they

want and begin to accept a future they can get...  
<sup>future</sup>

...they will not be bound by all of the constraints  
<sup>conscious</sup>

of the mind that bind us...

Her eyes became soft with pride and affection...  
<sup>infection</sup>

Her hunger made her sniff <sup>hopelessly</sup> under rocky ledges...

All of these substitutions demonstrate that this tenth grade reader is making extensive use of the semantic cuing system, looking for sense though not always very successfully.

This reader demonstrates very little propensity to correct, particularly when her miscues cluster, as they do in 61 even more than 59. She seems to be able to handle syntax in very short units, and then shift to another structure in midstream rarely asking herself if what she has produced sounds like English.

These two sentences provide good examples:

In the end I am sure that many of us who began this  
<sup>will begin to</sup>

<sup>impress</sup> pervasive generational <sup>rebellious</sup> rebellion will have second

thoughts when we see <sup>that</sup> what our children do to us.

This is Air Force One, where there are <sup>whether</sup> no <sup>not particularly</sup> parachutes.

This absence of correction for sense is quite typical not only of subject 232, but of 10L readers in general, and partially demonstrates their unconcern for both syntactic and semantic acceptability.

Subject 233 provides a particularly good example of the effect the text material may have upon a reader. He is the atypical member of this group previously mentioned, the only 10L reader with considerable tendency to correct, and rather persistent tactics for doing so. In reading 59, he corrected 41.8% of his miscues; other 10L readers have a much lower range, from 4.1% to 16.1%. Story 61, however, proved more difficult, and subject 233 corrected

only 16% of his miscues on this task. Other readers range from 2.4% to 10.9%, lowering their already low scores only slightly. In 61, it is primarily the large number of non-words substituted for unfamiliar words which subject 233 fails to correct.

Graphic and phonemic means for subject 233 also increase with the reading of story 61, and the higher percent of high proximity non-words is again partly responsible. His graphic mean moves from 5.24% to 5.7%; his phonemic mean from 4.98 to 5.63. Percent of semantic acceptability, on the other hand, is reduced from 51.9% to 34%. The higher semantic acceptability score from 59 can be attributed to the reader's several meaningful substitutions which bear no graphic or phonemic similarity to the text.

Totally unlike the other readers in the 10L group, all of whom lowered their syntactical acceptability scores by as much as 3%. Subject 233 actually raised his syntactic acceptability from 73.4% (59) to 76% (61). The increased complexity of both grammar and meaning in 61 caused this subject to pay stricter attention to the text, and to rely upon his intuitive sense of grammaticality even when the meaning was unclear.

In contrast to subject 232, this reader is able to manipulate longer units of syntax, as shown by the fact that his miscues reach far beyond the word level. Here are some examples from both stories:

OR           the youth of America  
ER ...of American youth

Whatever it is, it's got <sup>to be</sup> the blind staggers.

...staying tantalizingly ahead <sup>of the sheep</sup> and leading...

A coyote trap had caught her foot three years

before, when she was little <sup>more</sup> than half grown.

...we will have the good sense to meet them

with love, help them on their way, perhaps

even <sup>enjoy</sup> join them.

Several substitutions in the simpler story demonstrate considerable concentration on meaning and prediction of meaningful sequences.



lata  
The others followed after.

Immediately the five black-button noses were  
groping <sup>together</sup> eagerly.

The band that was huddled <sup>around</sup> about the <sup>stupid</sup> stoic burros  
was a mass of bleating <sup>movements</sup> movement.

Subject 233 attacks unfamiliar words with a technique that involves syllabification and partials. He is not always successful, but he is remarkably persistent:

preconception	1. pre=concept
	2. pre=concept
	3. pre-
	4. pre=comption
chronological	1. chrono=koli
	2. chrona
	3. chronalogically
institutionalizing	1. installation
	2. installation+lizing
psychiatric	1. psych-
	2. =psycharic-
	3. =psychareek

Perhaps this subject appears more seriously affected by 61 partially because he appears to be so much more proficient than other 10L readers on 59. If a reader corrects only 4.1% of his miscues, as did subject 236 (59) then it is difficult to lower that correction score even when reading much more complex material. Perhaps subject 233's position in the group is best reflected by the residual MPH scores on both stories:

Subject	Story 59	Story 61
232	6.99	12.70
233	.82	3.88
234	8.39	12.87
235	8.98	14.51
236	7.44	8.88

Subject 233's residual MPH scores may be favorably compared to those of eighth grade average readers of 59 and tenth grade average readers of 61. The residual MPH scores and the comprehending scores of the other 10L group members demonstrate that these readers are not successfully integrating the three cueing systems operating in the reading process. Graphophonic relationships are



not the problem: their graphic and phonemic proximity means show that they are making use of graphophonic information in the same way that average and high readers do, and attain at least as much accuracy. Neither is syntactic acceptability a problem for these readers within short units of structure. What these 10L students are unable to do is to hold on to the thread of the structure throughout entire sentences and longer passages. Those miscues which are syntactically acceptable, however, have high syntactic proximity to the ER. The semantic acceptability of 10L readers' miscues demonstrates that their ability to achieve meaning is minimal, except within short units of structure. Some very meaningful substitutions are made, but continuity of meaning is frequently lost and correction of semantically unacceptable miscues is infrequent. The problem seems to be one of getting it all together to get to the meaning.

#### High Proficiency Sixth Graders: 6H

The 6H group consists of two Black females, one White female, and three White males. The subjects read one story Sheep Dog, from an eighth grade text.

For anyone who, when concerned with determining reading proficiency, needs to be reminded that: (a) MPHW is not an adequate gauge, (b) an IQ score does not provide conclusive predictive information, and (c) comprehension scores do not provide the entire picture, we present the 6H readers along with a few of their scores. (And for those who feel that dialect significantly effects the reading process we can't resist offering dialect involvement scores.)

Table 5-11

#### Comparative Data: 6H Readers

Subject		Coded MPHW	Residual MPHW	IQ	Comprehension	Dialect Involvement
99	BF	3.81	2.16	91	11	1.4%
114	WM	2.56	.57	114	10	4
115	WM	5.56	2.30	111	52	1
118	WM	3.19	1.27	114	37	0
119	BF	5.25	1.91	128	77	17.5
120	WF	5.81	2.44	111	14	0

It would facilitate matters if the subject with the lowest number of miscues had not made the lowest comprehension score;

if the high IQ scorer's had made fewer MPHWS and had not had all that dialect involvement; if the subject with the lowest recorded IQ (91) did not have a higher comprehension score than the subject with the recorded 114 IQ and if the low IQ subject had not made fewer MPHWS than the top IQ subject. Facing such equivocal data we see the necessity of studying the individual's particular tactics and strategies in our search for more reliable indices.

The mean residual MPHWS for the 6H readers is 1.78, which is in a quite respectable range. On the same story the 6A group mean is 1.88. But only subject 114 among 6H readers has residual MPHWS below 1.00 while four 6A readers get that low. Still, the highest residual MPHWS among these readers is 2.44. We are dealing, then, with relatively proficient readers. The 6A group residual MPHWS mean is 1.07 on an easier task. They are therefore comparatively more proficient than these 6H readers. Comparison should indicate the effect of a task of some difficulty on the reading process.

The largest number of miscues produced by the 6H readers, like the 6A readers, are those which involve a difference of only one grapheme and/or one phoneme: graphic - 39.5%, phonemic - 38.1%. When these readers are able to make their substitutions fit grammatically and semantically into the context, they rarely bother to make corrections, for example:

...bedding down for the night on a small <sup>path</sup> patch of meadow.

...the five black-button noses were <sup>groping</sup> groping eagerly.

...the <sup>yapping</sup> yelping wail of a coyote

...under <sup>rock</sup> rocky ledges...

...lighted some <sup>bush</sup> brush against a dead juniper tree.

...stood <sup>solidly</sup> stolidly in the midst of the sheep...

Although, as a group, the 6H readers do not succeed on their harder task quite as well as 6A readers in producing syntactically and semantically acceptable structures, the ranges on both variables (syntactic and semantic acceptability) overlap considerably.

The 6H subjects use all of the language's cueing systems, but appear somewhat less efficient because of the relative difficulty of the story and limited interest and background of some 6H readers. Girls are not overly enthusiastic about "Sheep Dog."

Evidence of the readers' ability to anticipate syntactic

structure is provided by their grammatical transformations. Among the second grade through eighth grade subjects, these readers produce the largest percent (43.6) of miscues that involve no change in syntactic structure. Most of the miscues making up this percentage are word level substitutions. The 6H readers are experts in substituting words of the same grammatical function for text items and often such miscues are semantically acceptable. The miscues of subject 114 are exemplary:

...wall came from the north this <sup>night</sup> time.

The herder ~~made~~ <sup>silent</sup> a slight movement...

...ran lightly up the slope... <sup>on a</sup>

Once in a great while, when engrossed in getting meaning, these readers substitute words that have different grammatical functions than those of the text:

The others followed <sup>her</sup> after.

In this example, her is brought up from the deep structure, since it is the implied object of the preposition after.

But on rare occasions the 6H's appear satisfied with the nice sounds they are making and the smooth flow of their reading, while meaning is lost. Subject 120 settles, in these examples, for getting phonologically close while making effective use of syntax too, but only partial use of semantic cues.

Peggy was a <sup>descended</sup> ~~descendant~~ of a long line...

...and she froze looking <sup>internally to</sup> intently into...

The slanting rays of <sup>the</sup> moonlight <sup>probed</sup> ~~probed~~ <sup>and</sup> ~~the~~ shallow

<sup>washing</sup> wash.

...eyes caught a <sup>moment of</sup> movement in the sage...

This subject's low comprehension (retelling) score and her low semantic acceptability (21.7%) are additional evidence that she is not using effective comprehension strategies in this task.

She does what moderately proficient readers tend to do when

they lack sufficient experiential and conceptual background; she manipulates the grammatical structures as if they were English nonsense. That she can use comprehension strategies is evidenced by her handling of some miscues. In these examples she is able to recover both syntactic structure and meaning after she becomes aware that her first effort makes no sense.

Two burros, <sup>one</sup> their long gray ears sagging in drowsiness,

<sup>stolidly</sup> stood stolidly <sup>in</sup> in the midst...

<sup>He</sup> She tucked her nose into his hand, and <sup>she</sup> he patted the side of her head...

She went to a <sup>into</sup> saddlebag containing <sup>spots</sup> pots and pans...

He tossed her two <sup>and</sup> cold biscuits...

<sup>as</sup> she <sup>was</sup> spent and trembling.

Her sense of routine <sup>sold</sup> told her it was time...

<sup>took</sup> She looked up at the snarling coyotes...

All readers in the 6H group produce some non-words which they fail to correct. Sometimes a partial or two precedes the non-word, but in any case the reader keeps moving.

<sup>rabid</sup> ...a rabid animal...

<sup>vigilance</sup> ...or relax her vigilance.

<sup>tensely</sup> ...stood tensely over their kill.

<sup>bleat</sup> ...the ewe's last bleat...

<sup>procedure</sup> ...difference in procedure...

<sup>succulent</sup> ...for succulent bunch grass.

amphiteater  
amph-  
...shaped like an amphitheater...

Additional evidence of these readers' ability to anticipate the author's or another grammatical structure is reflected in their very low percent (0.2%) of miscues which result in grammatical transformations that cause lost or garbled deep structure. The range of anomalous grammatical transformation for all subgroups is 0.2% (6H) to 28.5% (2L). The mean for other groups reading the same story is 5.2% for 8A and 7.2% for 10L.

Most of the readers' miscues involve the substitution, omission or insertion of function words. Frequently the function words are present in the deep, but not in the surface structure. Subject 114, who has the highest percent of syntactically acceptable (78.8) and semantically acceptable (69.2) miscues in the 6H group, made few miscues, and most of these involve function words.

Been dead <sup>for</sup><sub>^</sub> some time.

You said <sup>that</sup><sub>^</sub> there was something wrong.

She sank down, too sore and <sup>too</sup><sub>^</sub> faint...

...between the gray blur of <sup>the</sup><sub>^</sub> sheep...

...the answer to <sup>this</sup><sub>^</sub> the maneuver.

...tangle of slashing coyotes and <sup>the</sup><sub>^</sub> whirling dog.

A composite has been made on the five sentences in which the readers (6H, 8A and 10L) make the largest number of miscues. On four of the five sentences the 6H readers make the fewest number of miscues and the 10L readers make the highest number. On only one sentence does the 6H group average a greater number of miscues than the 8A group. At the risk of isolating a small portion of their reading and generalizing from that sample we will look at the troublesome sentence. We must remember that as far as single sentences are concerned, this one has cued more deviations than any other one sentence for these 6H readers.

Subject 99

As Chip

leaped toward the coyote, it whirled

and ran lightly up the slope, staying  
Tantalizingly  
Tantalizingly ahead and leading Chip

toward the brow of the knoll.

Subject 119:

As Chip

leaped toward the coyote, it whirled  
and ran <sup>Tightly</sup> lightly up the slope, staying  
\$tantalizingly <sup>(C)</sup> awa- leaping  
tantalizingly ahead and leading Chip

toward the brow of the knoll.

Subject 120:

As Chip

<sup>(C)</sup> leaped  
leaped toward the coyote, it whirled

and ran lightly up the slope, staying

\$tantalizingly <sup>head</sup>  
tantalizingly ahead and leading Chip

toward the <sup>(C)</sup> brow of the knoll.

Subject 115:

As Chip

leaped toward the coyote, it whirled

and ran <sup>slightly</sup> lightly up the <sup>slopes</sup> slope, staying

Tantalizingly he had to lead  
tantalizingly ahead and leading Chip

toward the brow of the <sup>knolls</sup> knoll.

Subject 118:

It moved steadily forward<sup>o</sup> <sup>as</sup> As Chip

<sup>c</sup> le- leaped toward the coyote, <sup>it</sup> it whirled

and ran lightly up the slope, staying

tantalizingly ahead <sup>c</sup> and leading Chip

toward the brow of the knoll.

Subject 114:

It moved steadily forward<sup>o</sup> <sup>as</sup> As Chip

leaped leaped toward the coyote, <sup>it</sup> it whirled

and ran lightly <sup>on</sup> up the slope, staying

tantalizingly ahead and leading Chip

toward the <sup>c</sup> <sup>of</sup> <sup>brow</sup> brow of the knoll.

Three readers miscue on tantalizingly, an unusual, hard to articulate, word. They sample enough visual information to produce substitutions that have close graphic and phonemic proximity to the text. Rather than perservere on an unknown word, they produce non-words with the same grammatical function as the text and continue with their reading. Using their strong feeling for syntax they substitute with grammatical boundaries (tightly and slightly for lightly, leaping for leading, slopes for slope). When subject 115 is visually cued by ahead and leading he produces a structure that is syntactically and semantically acceptable with the last part of the sentence. Subjects 118 and 114 demonstrate their prowess with syntactic structuring by producing a major change in the sentence pattern which results in a transformation that is syntactically and semantically acceptable. While subject 115 substitutes slopes for slope and knolls for knoll, the results of

of his miscues do not disrupt the grammar or meaning of the passage. This reader, when faced with slope in another context and with knoll in five other occurrences in the story, does not miscue. His other substitutions of inflected plural forms for null singular forms never disrupt the syntax and semantics of the sentence.

The nimble <sup>beasts</sup> beast leaped away...

...whining close to his <sup>ears</sup> ear.

...beside the <sup>saddlebags</sup> saddlebag...

In one case this reader substitutes an -S form (skills) for a null form (skill) and then changes the following singular pronoun to a plural pronoun, thus making the substituted noun the antecedent for the substituted pronoun.

Peggy needed all her <sup>skills</sup> skill as <sup>they</sup> she fought to

control her charges...

Of all the groups, the 6H readers make the largest percent of miscues involving intonation. Most of these involve the end of a phrase or a sentence. (Two examples were given earlier in the miscues made by subjects 118 and 114, on the sentence having the largest number of miscues made by members of this group.) Subject 120 provides us with several more examples.

A coyote <sup>trapped and</sup> trap had caught her foot three years

<sup>When</sup> before, when she was...

She <sup>sniffled</sup> sniffed the cool air of the late spring

drifting down the wash, <sup>Before</sup> before lowering her

head to drink the cold water of the (small) stream.

...she often heard coyotes singing <sup>A</sup> a protest

from distant ridges, while the sheep rested safely.



Such miscues result in syntactic structures that are acceptable with the first part of the sentence. They show the subject's tendency to manipulate structure without being able to use meaning for confirmation.

Other intonation miscues are relative to phrase or clause structures. Again, subject 120 gives us the following examples:

...uneasiness, growing for the past two days<sup>o</sup> now<sup>?</sup><sub>^</sub>

became more acute.

As Peggy lay watching<sup>o</sup><sub>on</sub> the shadowy form...

\*  
...leaped away from her<sup>?</sup><sub>^</sub> flashing teeth and was gone...

\*her is changed from a possessive to the object of the preposition.

In general these readers show a strong sense of grammatical structure on this task. They can operate on fairly large units of syntax, sometimes accommodating rather than regressing. Violations of grammatical function constraints are infrequent. Most of their miscues involve substitutions, omissions or insertions of function words. They are usually able to use graphic and phonemic information without getting bogged down by it. Their ability to achieve semantic acceptability falls far behind their concern for syntactic acceptability, however they tend to become more semantically accurate as they get deeper into the context of the story. This group seems to show the effects lack of relevant background and interest in a particular task has on reading proficiency.

Average Proficiency Eighth Graders: 8A

It's hard to find an average eighth grader among the average eighth graders. In almost every variable what stands out is their wide range of difference.

In this group there are three White females (226, 227, 228) two Black males (225, 229) and one Black female (231). IQ scores are reported to be 96 to 110.

These subjects read story 59, Sheep Dog. One makes a total of 44 miscues, or 1.13 MPHW. Another makes 346 miscues, 188 on the coded portion or 10.0 MPHW. They correct 6 to 27% of their miscues, have semantic acceptability from 29 to 66% and comprehending scores from 44.4 to 81.3%. Syntactic acceptability range is 54 to 82%. Furthermore individual patterns are quite idiosyncratic. Subject 228 with 188 coded miscues (10 MPHW) has 60.3% semantic acceptability.

Subject 229 with 171 coded miscues (9.0 MPH<sub>w</sub>) has 29.2% semantic acceptability. Subject 225 with 1.81 MPH<sub>w</sub> corrects only 6% and has 52% comprehending score. Subject 191 with 5.06 MPH<sub>w</sub> corrects 28% and has 81% comprehending score.

If residual MPH<sub>w</sub> (the rate of miscues which are neither semantically acceptable nor corrected) is considered, then the effectiveness of four of the subjects looks more similar. Only subjects 228 and 229 have residual MPH<sub>w</sub> higher than 1.0. Only one 6H reader has residual MPH<sub>w</sub> on this story below 1.00. Subject 226 with a basic MPH<sub>w</sub> of 4.25 on the coded portion of the text has a comprehending score of 81%, so her residual MPH<sub>w</sub> drops to .95. Subject 225 with a 52% comprehending score only has 1.88 MPH<sub>w</sub> so his residual MPH<sub>w</sub> is .87. The balance, then, between the quality and quantity of their miscues produces similarly high effectiveness, though the subjects seem to use the process of reading somewhat differently.

Between the two less effective readers there is also notable difference. Subject 229 only has a 44% comprehending rating while 228's rating is 68%. Subject 228's high quantity is reduced to 2.98 residual MPH<sub>w</sub> by her high quality, while 229 is left with residual MPH<sub>w</sub> of 5.12.

Because of the differences in this group, the following brief descriptions may provide some insights into variations in their use of the reading process.

Subject 227 is a very efficient and effective reader judged by her performance on this task. She has the highest comprehension rating (82%) in the group as well as lowest MPH<sub>w</sub> (1.13) and residual MPH<sub>w</sub> (.39).

She shows a number of partials, corrections which occur before a full OR has been generated:

OR (e) sh-	OR (e) coy.	OR (e) th
ER while the	ER A coyote	ER pulled her ear;

A small number of her miscues are non-words, some of which only involve shifts in stress to the wrong syllable.

OR \$co	OR \$se vered	OR \$vi gilance	OR \$jagged (as in bagged)
ER ewe	ER severed	ER vigilance	ER jagged
OR \$Amph-heater	OR \$fenting		
ER Amphitheater	ER feinting		

Function words are involved in other miscues:

ER (The) frantic bleating	OR in	ER on	ER (The) building of
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OR At OR on OR this  
 ER A high ER Come, Peggy ER to the maneuver

This subject is one of the few we found with a phonemic mean higher than her graphic mean. In a few cases she produces graphically similar words which are also syntactically and semantically acceptable:

OR lost OR barred  
 ER Peggy loosed her grip ER teeth bared

OR rock OR distance  
 ER under rocky ledges ER Keep his stance between

OR Penny OR puppies  
 ER Peggy ER her pups

OR fight  
 ER to reassure them in their fright

Other miscues come close to being synonym substitutions:

OR tree  
 ER to stack the limbs against the trunk.

OR sheep  
 ER against the dead ewe.

Subject 227 has the highest comprehension rating (82%) for the group and for any reader of the story. She appears to be so atypical that one might wonder at her classification as an average reader. Since we used achievement test data in selecting subjects in eighth and tenth-grade we must assume that her score on the test does not reflect her evident proficiency. She shows a CTMM IQ of 99. Perhaps she is not a good group test taker.

Subject 226 with a residual MPH of .95 has the highest percent of successful correction (28%) and the highest rate of semantic acceptability in the group. She has the second highest comprehension rating (79%). But her MPH on the coded portion is 4.25.

She has a strong concern for meaning while not being as concerned for accuracy, as subject 227 seems to be. The graphic and phonemic means for 226 are 4.76 and 4.45, low for the group and considerably lower than 227.

Two common types of miscues illustrate the concern for meaning and success in maintaining acceptable meaning. A number of miscues involve the omission of optional elements:

ER We'll just have to...

ER It's a bad year for rabbits, and the coyotes are hungry.

ER The herder was still coughing, and (he) nodded his head...

ER ...bedding down for the night on a (small) patch of meadow.

ER She sniffed (at) the hard-packed meadow...

ER ...no longer (of) any use.

This reader also changes the dependency of many clauses.

ER He talked to his dog, (as) all herders do,

OR  
ER (As) Peggy lay watching, <sup>The</sup> the shadowy form of Chip...

ER The peaceful glade was filling with warmth from the sun <sup>and</sup> as the sheep moved to the creek.

OR  
ER It was well after dark when they were quiet. <sup>and</sup>

OR  
ER ...and she could return to camp. <sup>she</sup>

This subject shows a great many miscues involving function words which seem to indicate her rapid assumption of an underlying structure and regeneration of a not quite matching surface structure.

Here's an example of such a shift to a new surface structure with the same meaning though a somewhat different deep structure:

The coyote's walk was not that of a rabid animal, nor <sup>of</sup> a was (it) the creeping approach it used in attacking the sheep.

This next example shows the frequent minor manipulation of function words in the surface structure:

As they approached the tent, the thin wail of coyotes <sup>Their</sup> reached her ears from up-stream, <sup>the stream</sup> far to the north.  
The <sup>the</sup> Herder and <sup>in</sup> dog stopped to listen as...

Then, from the base of the next knoll, <sup>there</sup> came the startled bleat of (a) sheep...



relatively frequent corrections often achieve a recovery of meaningful deep structure. Uncorrected miscues are unlikely to need correction.

Subject 229 is a young man who tends to operate on smaller units of syntax. He is not as effective in getting to meaning and lacks the efficiency of getting to the deep structure with minimal cues that 226 shows. His comprehension rating was 28, second lowest in the group but higher than all the 10L readers and three of the 6H group. His residual MPHW is 5.12, high for both 8A and 6H readers. He corrects 23% of his miscues, but only 29% are semantically acceptable and 54% syntactically acceptable.

His miscues often compound each other, as this example shows:

The dog turned to go, but (not) until a last look over  
the land (c) assured (he) her that all was well.

Even the corrected miscue doesn't help because the structure has been garbled by other miscues.

This reader shows many turning starts (a phenomenon associated with uncertainty about following sequences) that don't show up as miscues but indicate his cautiousness.

He often seems to be attempting to accommodate later text to earlier miscues as an alternate to correction. The phenomenon appears in this long sentence:

On (the) night (s) when the (c) campfire (b) burned, she (h) often heard (t)  
coyotes singing (a) protest from distant ridges,  
while the sheep (w) rested safely.

In some cases this strategy leads to confusion which the reader is unable to overcome as in this example:

As they (s) approached the (b) bedded (s) sheep the moon rose, its (c)  
cold light (t) transfc (n)g the desert...

This reader frequently makes multiple attempts to handle troublesome words:

OR shadowly	OR \$vigorousny
shadow	\$vigilousny
shadow	ER vigilance
shadowly	
ER shadowy	

He does the same thing with complex structures where he loses

the underlying structures but often without success in recovering the structure. There are many evidences that he is using syntactic information in his reading even though his success is limited.

He often omits unneeded elements:

...always being aware of (her) responsibilities

...descendent of a long line of (good) sheep dogs.

It's been a bad year for rabbits, and (the) coyotes are hungry.

Other optional elements are inserted:

Peggy gulped<sup>down</sup> the biscuits...

Peggy was following<sup>her</sup>.

...a handful of<sup>her</sup> fur...

His concern for meaning is evident also, though he is not consistent in keeping his focus on meaning.

He produces a number of semantically acceptable substitutions:

The shallow<sup>shadow</sup> basin...became a<sup>gathered</sup> gathering pool of darkness.

The frantic<sup>beating</sup> bleating became less frequent...

...who tore chunks of fur and hide<sup>out of the</sup> from her neck.

In summary, 229 appears to have the ability to use graphic, syntactic, and semantic cues but when he encounters syntactic and semantic complexity he is not always able to get to the underlying structure and meaning. His miscues in such cases compound each other's effects and he moves on without having resolved his problem with some sequences. It is likely that if he were reading a story in which he had a high interest and more conceptual background that he would appear to be a more successful reader, just as it is likely that he would look more proficient with less complex syntactic structures.

These average eighth grade readers are less affected by the task difficulty than the high sixth graders; their effectiveness and efficiency comes through.

Table 5-12

Comparative Data: 8H, 10LA, 10HA, and 10H  
Story 60

	8H		10LA		10HA		10H	
	Range	Mean	Range	Mean	Range	Mean	Range	Mean
MPHW	1.7 - 4.4	3.0	3.8 - 9.6	5.1	2.0 - 4.9	3.3	1.4 - 2.9	2.1
Comprehension	30. - 53.	40.7	23. - 59.	34.8	24. - 64.	44.8	32. - 70.	51.8
Comprehending	50.5 - 92.6	79.4	63.2 - 88.4	75.3	74.0 - 92.0	81.4	66.7 - 90.9	77.3
Semantic Acc.	45.2 - 80.9	66.4	46.8 - 63.8	56.0	58.0 - 82.0	65.8	58.7 - 83.6	69.8
Syntactic Acc.	71.0 - 85.1	79.1	68.1 - 77.7	72.4	74.0 - 84.0	78.5	69.8 - 87.3	77.2
Correction	7.5 - 31.9	21.4	11.5 - 49.3	30.4	27.8 - 40.0	32.7	9.1 - 27.9	17.4
Graphic Mean	3.8 - 4.9	4.4	4.1 - 5.5	5.3	4.2 - 5.4	4.7	3.7 - 5.3	4.7
Phonemic Mean	3.3 - 5.3	4.2	4.1 - 5.0	4.3	4.0 - 5.5	4.5	3.9 - 5.2	4.8
Syntactic Change	7.1 - 7.7	7.3	7.2 - 8.0	7.6	7.1 - 7.5	7.3	7.0 - 7.8	7.4
Semantic Change	7.4 - 8.4	7.9	7.5 - 8.1	7.8	6.8 - 7.8	7.2	7.0 - 8.3	7.6
Residual MPHW	.26 - 2.2	.71	.43 - 3.52	1.40	.16 - 1.02	.62	.26 - .67	.46



Groups 8H, 10LA, 10HA, 10H Reading Story 60: Poison

Story 60 is an adult short story, Poison. The groups that read it also read story 61, which enables us to compare the four groups on each task and to compare each group on the two stories.

Though all four groups have relatively low MPH, each higher tenth grade group has successively lower MPH. The 8H group has a mean of 3.0, between 10HA and 10H. Residual MPH for all groups is below 1.0, except 10LA which is 1.4.

Comprehension rating means are successively higher for the tenth grade on story 60. The 8H group is between 10LA and 10HA. On the other hand, comprehending means fall within a narrow range for all groups (75.3 to 81.4%) with the highest mean belonging to 10HA.

The similarity in comprehending is one of several indications that this task is not overly difficult for any of the groups. In syntactic acceptability the range of means is 72.4 to 79.1%; in semantic acceptability 8H, 10HA and 10H are between 65 and 70%. The 10LA group is lower at 56%

The two average tenth grade groups have relatively high rates of correction (30 and 33% respectively). The high groups show lower correction means (8H, 21%; 10H, 17%).

Graphic and phonemic means are relatively low for these groups, particularly for 8H which drops to 4.4 and 4.2; 10LA is up to 5.3 on graphic proximity, not notable except in this comparison. 10LA has the only appreciable spread between graphic and phonemic means, one full point.

There is little difference in the means of syntactic and semantic change for groups on story 60.

Table 5-13 shows that all groups reading story 60 corrected syntactically unacceptable and partially acceptable miscues at a much higher rate than they corrected fully acceptable miscues. Of course the actual number of miscues fully unacceptable syntactically is small. The 10H's as a group had only five such miscues and corrected three.

These groups correct higher proportions of semantically unacceptable and partially acceptable miscues than miscues semantically fully acceptable. They showed particularly high percents of corrections of partially acceptable miscues.

No important group differences appear in these correction patterns.

In this comparison, with groups of different proficiency within the same grade reading the same story, we've demonstrated that all

Table 5-13

## Groups Reading Stories 60 and 61

## A. Correction and Syntactic Acceptability

	Not Acceptable	Only With Prior	Fully Acceptable	% of all Miscues Corrected
10LA60	60.0	67.4	18.1	29.1
10HA60	35.3	57.9	26.3	32.6
8H60	36.4	44.4	15.9	20.7
10H60	60.0 (f=3)	63.2	14.7	19.8
10L61	5.3	18.8	9.1	16.7
10LA61	6.1	21.9	17.7	18.3
10HA61	30.0	34.1	18.8	22.0
8H61	21.4	33.3	12.7	16.9
10H61	50.0	57.1	16.0	23.7

## B. Correction and Semantic Acceptability

	Not Acceptable	Only With Prior	Fully Acceptable	% of all Miscues Corrected
10LA60	25.0	64.4	16.0	29.1
10HA60	30.9	57.4	18.8	32.0
8H60	25.6	43.2	14.6	20.7
10H60	31.6	60.9	13.0	19.8
10L61	5.3	18.8	16.7	7.6
10LA61	16.0	22.4	15.3	18.3
10HA61	18.1	31.1	15.3	22.0
8H61	8.1	32.5	14.7	16.8
10H61	11.6	51.4	13.3	23.7

are capable of reading it with relative effectiveness and efficiency. The 10LA group is consistently a bit below the other groups on most criteria, particularly semantic acceptability but not in any sense that indicates a total lack of competence to read the story.

Comprehending scores for the two average groups are brought up by their relatively high rates of correction. The latter is due partly to a tendency toward perseverance on unfamiliar words until a satisfactory response is achieved. The 8H and 10H groups seem to be less likely to persevere in such cases.

Groups 8H, 10L, 10LA, 10HA and 10H Reading Story 61: Generation Gap

Story 61 is Generation Gap, a magazine essay, which shows itself by comparison to be a much more difficult task for all groups than 60 or 59. Story 61 was read by 10L as well as the four groups who read story 60. Every group had a higher rate of MPH on 61, but the rate is still progressively lower as proficiency goes up. Residual MPH is also higher but progressively declines with a much wider mean disparity between groups than 60 produces.

Comprehension is highest for 10H with 10HA next and 8H third; 10LA shows a mean only slightly above 10L. All groups are down compared to their rating on 60.

For comprehending all groups are also down but there is now a stair step relationship from 10L (22.3%) to 10LA (43.5%) to 10HA (50.5%) to 8H (59%) to 10H (70%) whereas on 60 the four groups showed little difference. Though the task is harder, differences in proficiency cause the groups to look quite different on it. One 10H reader actually had a higher score on 61 than 60. Range in both 8H and 10H is much greater than on 60 again indicating how the harder task reveals proficiency differences.

Semantic acceptability shows all groups lower than on 60 with 10LA and 10HA at about the same percent (38%, 36%) on 61.

The stair-step effect is apparent on syntactic acceptability. 10H is actually higher (80% as compared to 77% on 60). All groups are not off so much on syntactic acceptability. Even 10L with only 14% of semantic acceptability has 43% on syntactic acceptability (10L's figures are 31% and 61% for story 59 however). On the harder task the difficulty of the groups in handling meaning is more notable than their syntactic problems.

Correction patterns are quite different on 61 than 60; 10H is higher (24% as compared to 17%) but all other groups are down. Only 10H is able apparently to use corrections to overcome to any extent the extra problems encountered in the harder task.

The relationship of correction to syntactic and semantic acceptability of miscues among groups reading story 61 contrasts sharply with patterns in the reading of story 60, discussed above

Table 5-14

Comparative Data: 8H, 10L, LOLA, LOHA, IOHA, and IOH story 61

	8H		10L		LOLA	
	Range	Mean	Range	Mean	Range	Mean
MPHW	1.7 - 9.3	4.4	7.2 - 18.0	13.2	5.4 - 14.9	7.7
Comprehension	10. - 60.	27.5	0.0 - 63.0	17.2	5. - 46.	18.6
Comprehending	17.9 - 84.8	59.0	14.5 - 46.0	22.3	21.3 - 54.0	43.5
Semantic Acc.	8.9 - 80.4	50.5	4.5 - 34.0	14.4	14.0 - 43.0	37.8
Syntactic Acc.	41.1 - 39.1	73.5	28.2 - 76.0	42.7	36.0 - 68.0	61.0
Correction	4.3 - 26.3	15.1	2.4 - 16.0	9.7	1.1 - 32.0	21.0
Graphic Mean	5.0 - 5.9	5.5	5.2 - 6.5	5.9	5.4 - 6.3	5.8
Phonemic Mean	4.9 - 6.4	5.5	5.2 - 6.1	5.6	5.1 - 6.0	5.5
Syntactic Change	6.9 - 8.7	7.8	8.1 - 8.7	8.4	7.9 - 8.5	8.1
Semantic Change	6.6 - 8.4	7.4	6.5 - 8.1	7.2	5.6 - 7.3	6.8
Residual MPHW	.44 - 7.59	2.21	3.88 - 14.51	10.56	1.93 - 11.73	4.79

	LOHA		IOH	
	Range	Mean	Range	Mean
MPHW	3.6 - 7.5	5.7	2.3 - 4.4	3.0
Comprehension	17. - 56.	37.0	29.0 - 65.0	43.0
Comprehending	41.7 - 55.1	50.5	50.0 - 93.9	70.0
Semantic Acc.	29.2 - 41.4	36.1	45.2 - 69.7	54.4
Syntactic Acc.	66.6 - 74.0	66.3	69.7 - 89.5	80.3
Correction	12.0 - 40.0	21.7	6.0 - 45.2	24.4
Graphic Mean	4.2 - 6.3	5.5	5.2 - 6.5	5.8
Phonemic Mean	3.8 - 6.1	5.2	5.0 - 6.2	5.6
Syntactic Change	7.4 - 8.1	7.8	7.0 - 8.4	7.8
Semantic Change	5.4 - 8.0	6.8	7.1 - 7.6	7.3
Residual MPHW	1.6 - 3.74	2.85	.15 - 2.2	.98

(see Table 5-13).

Only 10H shows a higher overall rate of correction for story 61 (24%) over story 60 (20%). The 10L and 10LA groups actually show lower rates of correction of syntactically unacceptable miscues than of those syntactically fully acceptable. The other groups show more correction of syntactically unacceptable miscues but less than for story 60. Only 10H shows a strong proportion (50%) of correction. Similarly for partially acceptable miscues all groups show their highest rates of correction but only 10H approaches its rate on story 60.

No group shows much more correction of semantically unacceptable miscues than those that are fully acceptable semantically. Miscues partially acceptable semantically are most likely to be corrected by all groups. Again, however, only the 10H group has a rate comparable to the rate of correction on story 60.

Every group has higher means for graphic and phonemic similarity of ER and OR on story 61. For 8H and 10H they are over a full point higher yet there is little difference among groups reading 61. The difficulty is not reflected in any differential ability to handle letter and sound relationships. One factor is the higher proportion of non-words that are close graphically and phonemically in all groups.

Semantic and syntactic changes are not much different from group to group. The 10L group produced a very high mean (8.4) for syntactic change; the group had virtually no change since 9.0 is the highest possible score.

The single factor that shows best the ability to cope with the harder task, story 61, as compared to 60, the easier task, is the semantic acceptability of the miscues. On 60, which all groups other than 10LA could handle easily, the means were very similar. On 61, however, their different proficiency shows clearly.

This difference is also reflected sharply in different means on comprehending scores on 61.

The Pearson correlations reported in Chapter 3 reflect the data shown here (Table 3-9 and 3-10). On story 61 comprehending shows positive correlations with semantic acceptability (.94), syntactic acceptability (.79) and percent corrected (.54). On 60, the only significant positive  $r$ 's for comprehending are semantic acceptability (.89) and syntactic acceptability (.62). Negative correlations for comprehending on 60 are with syntactic proximity (-.39), and MPHW (-.47). On story 61 there are also negative correlations with syntactic proximity (-.71) and MPHW (-.83).

The correlation between total percent corrected and percent semantically unacceptable but corrected is higher on 61 (.88) than 60 (.74). Correction percent also correlates with syntactic

acceptability on 61 only. Percent corrected shows negative correlations for story 60 with semantic proximity (-.57), syntactic proximity (-.44) and phonemic proximity (-.43). A negative correlation shows in 61 for correction and MPHW.

In both stories semanti. and syntactic acceptability show strong correlations (60: .77, 61: .83). Both variables show negative correlations with MPHW which are higher in 61 than in 60. There is more tendency for miscue quality to vary with quantity in 61 than in 60.

#### Low Average Proficiency Tenth Graders: 10LA

The 10LA group consists of five readers: one Black male, two Black females, and two White females. Their I.Q. scores, according to the California Test of Mental Maturities, range from 98 to 103, with the exception of one student who scores 80.

As among the 10L readers, there is one student in the 10LA group who is not typical of the rest. In the 10LA group, however, this reader stands out due to her relative ineffectiveness and inefficiency, rather than due to her proficiency. She does not perform as well as others in her group on either task, but performs particularly poorly on story 61. Her I.Q. score is not the lowest reported for the group: 98 on the C.T.M.M. The reading strategies of subject 241 will be considered later in this discussion.

The tendency to correct unacceptable miscues is notably stronger among 10LA readers than among 10L. This is accompanied by a tendency to leave uncorrected those minor miscues due to function word problems, and those miscues which are dialect linked. Left uncorrected also, most especially in story 61, are a large number of non-word substitutions for unfamiliar lexical items.

This is noteworthy since these readers will often try several non-words at a single occurrence. The mean percent of correction for this group reading 61 is 21%; the mean percent of correction on story 60 is 30%. These mean scores are lowered in each case by subject 241, who corrects 11.5% of her miscues on story 60, and only 1.1% on story 61.

Miscues involving function words are predominant in the 10LA group's reading of both selections, and miscues involving pronoun substitution are particularly prevalent in story 60, indicating some reference problems. These miscues and others tend to cluster and build up more than in groups of greater reading proficiency, and it is in such cases that these readers frequently are unable to correct syntactically and semantically unacceptable sentences. Still, on story 60, the group averages 72.4% syntactic acceptability, and 56% semantic acceptability. Those miscues which were either acceptable before correction or corrected (comprehending score) average 75.3% on the same story. Story 61 causes lower syntactic and semantic acceptability means: 61% and 38%, respectively. The comprehending mean is lowered by over 30% to 43.5%. Non-word

miscues are also typical of all members of this group, on story 60 but particularly on story 61. These are non-words with high graphophonic proximity to the text, frequently more than one is attempted in a single occurrence. These readers are in general more persistent than the 10H, for example, who spend less time attacking unfamiliar items.

acculturating: \$acculating, \$accuriating

obstinacy: obs, \$ob-stinsas, \$obs-stinsasy

Synthetic alligators: \$synethic \$askalators

asphyxiate: \$asphilliate

bonsai: bons-, \$bon-wewer, \$-bonsewer

Subject 238 produces miscues quite typical of the 10LA group. He omits function words which are insignificant, frequently without corrections:

I parked the car and went up (the) five steps to the balcony...

...Ganderby's car swung around (to) the front of the bungalow.

...so the beam wouldn't swing (in) through the window...

I took (out) my handkerchief...

These function word omissions often include conjunctions:

He didn't even turn his head toward me, (but) I heard him say...

He was wearing a pair of pyjamas with blue, brown, and white stripes, (and) he was sweating terribly.

Like other readers in this group, subject 238 makes many substitutions which demonstrate that he is involved in the prediction of meaning.

...he stood leaning against a crate <sup>opening</sup> containing a spare airplane engine...

I tiptoed <sup>in</sup> out to the hall, <sup>called</sup> looked up Ganderbai's

number in the book...

"Chloroform," he said <sup>quickly</sup> suddenly...



But that didn't seem to make anyone feel any better.

Each of these miscues involve the substitution of an OR which both retains the grammatical function or the ER and has a high semantic proximity to the text.

Subject 238 makes other miscues which reach beyond the word level, causing structural transformations, yet retaining both syntactic and semantic acceptability:

I stood beside him trying to think of the best thing

I could  
to do.

crossed  
I went across to the door...

whispered  
...and now I was whispering, too.

He screwed up his eyes and drew <sup>deep breaths</sup> breath sharply through  
his teeth.

Not  
No one. No one yet.

As is typical of other readers in this group, this student encounters some difficulty with pronoun referents in story 60. In many instances, more than one pronoun is logically possible within the framework of the story.

he  
Tell me where it bit you.

I  
You know it won't bite,...

we  
...trying to think the thing out while he talked.

he'd be  
If Harry...did something to frighten the krait and get

bitten I was going to be ready...

it  
Keep you cool.

I  
See it, it's still there. It went under that.

This reader has a very careful system of syllabification which he employs when attacking new and/or difficult words. Many partials and running starts are evidence of this reader's persistence:



cynicism: s-, sigh-, \$signnicism, cy-nicisa

acculturating: a, acu-, acul+her+a+ting

institutionalizing: in+sti+tu+tionalizing

obstetrician: ob-, obster-, obster+trich+an, obster-,

goiters: goi-, goit-, go-, goters, goters

Subject 238 was affected by the difficulty of story 61, though not to the same extent as subjects 240 and 241. His miscues tend to cluster considerably and become hard to correct. His MPHW was raised from 4.5 (60) to 5.8 (61), but his residual MPHW was raised from .87 (60) to 2.21 (61). He corrected slightly fewer miscues in the more difficult story (32.7%, 60; 28%, 61), his syntactic acceptability was lowered by 11%, and his semantic acceptability lowered by 12%. Graphic and phonemic means, on the other hand were raised considerably: this reader's graphic proximity mean was raised from 4.87 (60) to 6.10 (61) and his phonemic proximity mean from 4.14 to 5.95.

Because of the grammatical complexity and semantic sophistication of 61, many readers find it necessary to attend much more carefully to the word level, predicting less of the structure and meaning to follow. Subject 238's miscues reflect just such a strategy: his acceptable miscues in 61 are syntactically somewhat closer and semantically more removed from the text. His syntactic proximity moves from 7.41 (60) to 7.97 (61); his semantic proximity moves from 8.07 to 7.00.

As previously mentioned, subject 241 is the least successful reader in the 10LA group. She demonstrates less concern for meaning than other group members: her residual MPHW is the highest on both stories, and her percent of corrected miscues is the lowest. She is also more affected by the complexity of 61 than the other students:

Subject 241	Story 60	Story 61
Correction	11.5%	1.1%
Accept. or Corr.	63.2%	21.3%
MPHW	9.56%	14.91%
Residual MPHW	3.52%	11.73%

This subject has a strong tendency to substitute real words with high graphophonic proximity to the text but little or no syntactic and/or semantic relationships:

It is <sup>previously</sup> precisely this <sup>circumcize</sup> cynicism that has divided fathers  
and sons.

There was a note of <sup>satirization</sup> sarcasm in Ganderbai's voice...

It is a new game when the children <sup>begin assuming</sup> begin assuming  
control of the country.

Young dissidents have been widely <sup>berated</sup> berated.

...the Pentagon will <sup>repent</sup> retreat.

Subject 241 does offer evidence that she is reading beyond the word level, however, with reversal miscues such as these:

ER:

neatly tied in a bow

draw back the sheet

put the bottle right into his hand

the best thing to do is for me to draw...

OR:

tied neatly in a bow

draw the sheet back

put the bottle into his right hand

the best thing to do for me is to draw...

And a few very appropriate substitutions indicate that she is not totally unconcerned about meaning:

...went up <sup>stair, of</sup> (the) five steps to the balcony

.. status symbols that <sup>prolong</sup> propel

...whether or not the <sup>international</sup> interna' combustion engine should be

allowed to <sup>exterminate</sup> asphyxiate us.

I switched off the head <sup>lights</sup> lamps...

Subject 241 makes a considerable number of function word omissions, but unlike more proficient readers, she makes many omissions which result in unacceptable structures:

...squirting out some of (the) yellow fluid

I could see the blue vein (on) the inside...

(For) about three seconds there was silence...

The quantity, more than the quality, of the miscues made by subject 241 appears in the statistical data for this group on 60. In terms of quantity, the group ranges from 3.69 to 4.5 MPHW, while subject 241 has a score of 9.56. Correction percents range from 28.8% to 49.3%, while subject 241 shows 11.5%. For the other members of the group from 20.4% to 24.6% of the miscues are unacceptable but corrected. For her the figure is 9.1%

In terms of quality, this group's statistics do not particularly distinguish this subject from other group members. One subject shows a syntactic acceptability score .3% lower than hers; a different reader shows a semantic acceptability score of 7% lower. Her comprehending score is only 5% lower than the next lowest score. As previously mentioned, however, both her correction percentage and her comprehending score drop considerably on story 61.

The 10LA group, then, with its one atypical reader, outperforms the 10L in several ways. Whereas the 10L group demonstrates practically zero tendency to correct, the 10LA group corrects roughly 30% on story 60 (one reader corrects 49%). Whereas the 10L readers make 31% semantically acceptable miscues on story 59, the 10LA group shows 56% semantic acceptability on story 60. And the 10LA group makes fewer miscues in general; their mean MPHW is half the mean MPHW of the 10L group (stories 59 and 60). Due to a much greater concern for meaning (as evidenced in the correction and semantic acceptability scores), the 10LA group's residual MPHW is also many points below the 10L: 1.40 (10LA60) as opposed to 6.52 (10L59).

#### High Average Proficiency Tenth Graders: 10HA

The 10HA group consists of five readers, one Black male, one Black female, one White male and two White females. Their scores on the CTMM range from 97 to 119. Like the 8H, 10LA, and 10H groups, the 10HA read stories 60 and 61.

The group demonstrates tremendous concern for meaning in two ways: all group members have relatively high percents of corrected miscues, and high percents of semantically acceptable miscues (particularly as a result of synonym substitution and minor transformations involving function words). Except for somewhat varying reactions to story 61, there is no reader who is particularly different from the others: rather, these five form a fairly

homogeneous group about which several generalizations may be made.

All readers demonstrate a large amount of function word activity, a great deal of this activity resulting in perfectly acceptable structures. These examples come from four different subjects:

...when the children begin assuming <sup>the</sup> control of the country.

...stop driving until we (can) see Los Angeles.

...whether or not the internal combustion engine <sup>will</sup> should be allowed to asphyxiate us.

...a pair of pyjamas (with) blue, <sup>and</sup> brown <sup>with</sup> (and) white stripes.

I tiptoed (out) to the hall.

I went (over) to his bed.

Several subjects make miscues involving a transformation from a singular to a plural construction or vice versa. Most of these are quite acceptable within the context of the material:

...he would lose the fringe <sup>benefits</sup> benefit of free psychiatric care.

...call off the phantom political issue(s) that have divided us...

...I switched on the <sup>lights</sup> light in the hall...

I noticed that his <sup>the lights were</sup> light was still on...

...for a (few) moment(s)...

Other transformations of a more complex nature are made by all

readers, some of them requiring either a correction or a later accommodation in order to be acceptable. These miscues from four different readers demonstrate that the LOHA group is relying heavily upon syntactic cues, as well as semantic, and that they are able to handle large units of structure both effectively and efficiently.

Harry paused <sup>with the silence</sup> and ~~was~~ silent for a moment.

...his whispering wasn't disturbing the thing <sup>(laying)</sup> ~~that~~ lay there.

I was ~~(going to be)~~ ready to cut the bitten place...

The question came ~~(so)~~ <sup>so</sup> sharply <sup>it</sup> it was like a small explosion.

...<sup>it</sup> ready to cut the bitten place...

They will know instinctively what freedom is all about (intonation: freedom is everywhere).

Evidence of a great concern that reading should make sense is provided by the numerous synonym or near synonym substitutions made in both stories. These miscues came from all five readers in the group:

...a physically and morally <sup>dilapidated</sup> depleted environment...

I'd better <sup>honor</sup> humor him.

...the door <sup>to</sup> of Harry's <sup>bedroom</sup> room...

...I've been <sup>waiting</sup> wanting to cough...

...Ganderbai <sup>went to</sup> bent over <sup>to</sup> Harry.

Young <sup>descendants</sup> dissidents have been widely berated

He drew breath <sup>deeply</sup> sharply...

...you're not to go spoiling this <sup>time</sup> Now

...where a lucky few can <sup>jump</sup> climb into lifeboats.

Story 60 frequently caused a particular type of miscue to occur in the readings of all members of the LOHA group. The fact that there are only three male characters and a snake (who may be referred to by either the neuter or masculine pronoun) means that potentially all four might be referred to as "he". Additionally, the style of the author is such that he deletes from the surface structure many personal pronouns which are present in the deep structure and which the readers therefore insert:

I  
I knew I mustn't move.

Lying on <sup>his</sup> my back reading...

See <sup>(it)</sup>, it's still there...

The expression was in the eyes <sup>his</sup> around the corners  
of the <sup>his</sup> mouth.

I  
He paused, held the bottle up to the light...

He  
I leaned over to tell Harry...

he's  
But it's probably done for already.

Subject 244, shows considerably less pronoun activity as the story progresses and he begins to get the characters straightened out in his mind. In any case, the pronoun substitutions made by the LOHA readers are not always optional and there are some moderately serious reference problems here. The pronoun shifts reflect shifts in meaning because of the subjects difficulty in keeping antecedent nouns in the foreground of meaning.

These several types of miscues, along with the numerous nonwords generated in the reading of 61, speak for the high quality of the miscues produced by the LOHA group. In terms of quantity, however, we find that the text can make a considerable difference for these readers. Their mean MPHWS goes up from 3.29 (60) to 5.7 (61). As

is typical of other readers, they become graphically and phonemically more accurate on the more difficult selection, but syntactically and semantically less acceptable. Their graphic mean moves from 4.7 (60) to 5.47 (61), their phonemic mean from 4.51 (60) to 5.15 (61). Syntactic acceptability shows a mean of 78.48% for 60, but is reduced to 66.26% for 61.

Semantic acceptability is decreased more sharply from 65.8% (60) to 36.1% (61). The comprehending score of this group drops from 81.4% (60) to 50.54% (61). The LOHA readers are much less bothered by the syntactic complexity of 61 than they are by the conceptual load. For this reason, the residual MPHW goes up, from .62% (60) to 2.89% (61).

These readers, while appearing so similar in their handling of 60, react in different ways to the more demanding task, story 61. All readers in the group do a less efficient and effective job, but as the statistical data shows, they respond with differing reading strategies. Subjects 224 and 245, for example, make an interesting comparison. Their correction scores on 60 are fairly close: 27.8% (244) and 31.9% (245). Reading story 61, however, subject 244's correction percent drops to 12.0%, while subject 245's is raised to 40%. Though he makes about the same MPHW and yet corrects more, subject 245 ends up with a residual MPHW score very similar to that of 224, because his miscues are less semantically acceptable. Subject 244 drops from 67.6% to 40% (61) semantic acceptability, whereas subject 245 drops lower: from 62.9% (60) to 29.1% (61).

Subject 249 may be interestingly compared with both of the two previous subjects, 244 and 245. Her correction percent on 60 is much higher than any of the other subjects in the group: 40%. But on story 61 it is reduced greatly: 16%. On story 60 her comprehending score was equal to the other two: 80% for 249, with 81.5% for 244 and 79.3% for 245. But on story 61 her comprehending score is lower than the others, because her miscues are less semantically acceptable and, as we have seen, she corrects so much less. Her comprehending score is 41.1% (61), with 48% for 244 and 54.5% for 245. Consequently her residual MPHW is between theirs (3.41, 245: 3.52, 249: 3.79, 244). Whereas it had been lower than either of them on story 60.

Subjects 246 and 247 make another comparison of interest. They make virtually identical MPHW's on story 60 (2.06, 246; 2.00, 247), though otherwise subject 247 looks somewhat more proficient than 246, since her correction, syntactic and semantic acceptability and comprehending percents are higher, and her residual MPHW is therefore lower. Additionally, on story 61, subject 247 has a lower MPHW 3.56, 247; 4.25, 246). However, her syntactic and semantic acceptability scores drop considerably on story 61, while the scores of 246 drop only slightly by comparison.

Subject 246	60	61	Subject 247	60	61
Syntactic Accept.	74.	67.2	Syntactic Accept.	84.	53.1
Semantic Accept.	58.	41.4	Semantic Accept.	82.	40.8



Where the difference in their comprehending scores had been almost 20% on story 60, this difference is reduced to 2% on story 61. Thus subject 246 who appears less proficient than 247 on story 60, looks quite similar to subject 247 on story 61, making more miscues and correcting less, but making more acceptable miscues at the same time.

In fact, all of the LOHA readers are quite proficient, and demonstrate a high degree of concern for both syntactic and semantic cues. They use many of the same efficient and effective reading strategies as they undertake both tasks. This data shows, however, that they may appear quantitatively similar for some different reasons.

#### The High Proficiency Eighth Graders: 8H

These subjects also read both story 60 and story 61. With their performance on the two very different tasks we get more insights into how the reading process changes in these relatively proficient readers when the task difficulty varies.

The six subjects in this group include four White females, one Black female and one Black male. I.Q. scores are reported to be 106 - 130.

Table 5-15

#### Comparative Data: 8H, Stories 60 and 61

Subject		172	173	179	181	182	184
MPHW	60	1.69	3.25	4.25	4.31	1.75	3.31
	61	1.69	4.13	8.31	5.13	2.56	3.38
Sem.	60	68.0	68.6	45.2	80.9	58.0	77.5
	61	69.6	42.1	2.9	56.0	45.7	80.4
Syn	60	80.0	75.7	71.0	85.1	84.0	78.9
	61	82.6	71.9	41.1	82.0	74.3	89.1
% Corr.	60	16.0	28.6	7.5	31.9	26.0	18.3
	61	4.3	26.3	8.9	26.0	14.3	10.9
Comp.	60	78.0	85.7	50.5	92.6	72.0	87.3
	61	73.9	61.4	17.9	62.0	54.3	84.8
Res. MPHW	60	.39	.48	2.20	.26	.48	.43
	61	.44	1.59	7.59	1.95	1.17	.51



The performance of two subjects on these two different tasks is remarkably consistent. Subject 172 has 1.69 MPHw on the coded portions of both stories. Subject 184 shows 3.31 on story 60 and 3.38 on story 61, about double that of subject 172. But residual MPHw is .39 on story 60 and .44 on story 61 for subject 172. It is .43 and .51 for subject 184. Each of these two subjects shows similar semantic acceptability, syntactic acceptability and comprehending scores for both stories. Only percent of correction is notably higher for both subjects on 60 than 61.

The other four subjects all show substantially less proficiency with 61 than with 60. Two of them (181 and 182) look very much like the two subjects discussed above on 60. They vary in MPHw (181, 1.75; 182, 4.31), but in residual MPHw are much more similar (181, .26; 182, .48). Subject 181 shows 4.31 MPHw but with comprehending of 92.6% achieves the low residual MPHw of .26. But all show somewhat higher MPHw on 61 and very much lower semantic acceptability. Residual MPHw for subject 181 goes up to 1.95.

Subject 179, whose reading of 60 is the least proficient (semantic acceptability 45.2%, correction 7.5%, comprehending 50.5%, residual MPHw 2.2%), drops off sharply on 61. His MPHw almost doubles to 8.31. Semantic acceptability falls to 8.9%, syntactic to 41.1%, comprehending goes to 17.9% and residual MPHw to 7.59.

All subjects show substantially lower graphic and phonemic means for story 60. Partly, this reflects higher rates of non-word substitutions in story 61 which have high graphic and phonemic proximity to the ER. For example:

OR	\$resuciate	\$so'phist ry	\$ob'stinatcy
ER	resuscitate	sophistry	obstinacy

The low means for graphic and phonemic on story 60 also reflects reasonable substitutions with low graphic and phonemic proximity:

OR		his
ER	...around the corners of the mouth	

OR	said	OR	But
ER	...Harry asked.	ER	Yet somehow...

OR	lights	OR	was
ER	head lamps	ER	...when he stood leaning...

OR	he
ER	...where it bit you

OR	out
ER	Could you come round at once?

Subject 181 is the one referred to earlier who produces 4.31 MPHw on 60 but has 93% semantically acceptable or corrected miscues.

She corrects 32% of her miscues, more than she needs to, considering that 81% of her miscues are semantically acceptable and there is little change in meaning in these acceptable miscues. That leaves only one miscue per 400 words of text which is not semantically acceptable or corrected on 60.

As she progresses through this story she seems to transform more freely. She is able to predict meaningful structures and produce acceptable surface representations as these examples show:

It could be up the leg<sup>s</sup> of his pajama.  
<sup>just</sup> <sup>one of</sup> <sup>the</sup>  
 ^ ^ ^

I put my arm around his shoulder as he walked across  
 and we  
 the hall (and) out onto the balcony.

...a mother of pearl button, and that was something I  
 which  
 (had) never had...

In contrast, 61 is actually read more carefully. There are three times as many partials per hundred words in 61 produced by subject 181. Transformations are more minor, largely confined to optional function words.

(Once we have) installed Ralph Nader as (the)  
 president of General Motors and Tommy Smothers  
 as (the) head of CBS (we will) (have to) start  
 looking inward.

Many of subject 181's miscues in story 61 are non-words:

OR \$ac culturing	OR \$institutionlizing
ER acculturating	ER institutionalizing

OR \$aphyxicate	OR \$nonocaine	OR \$obstriction
ER asphyxiate	ER novocaine	ER obstetrician

Note how close these are to the graphic and phonemic form of the ER. Other words are replaced by similar looking and/or sounding real words often relatively appropriate to the text.

OR	descendents
ER	Young dissidents have been widely berated...

OR

ER ... (we) must resuscitate a physically and morally <sup>developed</sup> depleted environment.

OR

ER ...up the <sup>co-ordinate</sup> corporate ladder.

In both stories, subject 181 sometimes corrects after multiple miscues have created a problem:

ER <sup>(c)</sup> I went softly <sup>to</sup> ~~out of~~ the room in <sup>my</sup> ~~my~~ stocking feet...

ER <sup>(c)</sup> ~~while we were~~ <sup>when he was</sup> still thinking out a plan.

ER <sup>(c)</sup> ~~We will~~ <sup>see</sup> need to free ourselves...

ER <sup>(c)</sup> ~~...to suck~~ <sup>in</sup> his intellect down

This subject shows a great many function word substitutions, omissions, and insertions:

60:  
Noun Markers

...went up <sup>(the)</sup> five steps...

...to get <sup>(a)</sup> the words...

he got <sup>(a)</sup> shot in the stomach...

The smell of <sup>the</sup> chloroform...

61:

risks <sup>(the)</sup> clubs and <sup>(the)</sup> courts

...the greed, the anxieties, and <sup>the</sup>

...in <sup>the</sup> sixth grade...

60:  
Conjunctions

... <sup>(and)</sup> as I drove home...

... <sup>(and)</sup> I pushed the door...

...on his back <sup>and</sup> with a single sheet...

...to be ready <sup>and</sup> to cut...

...standing well away <sup>(but)</sup> at the same time...

61:

... <sup>(c)</sup> ~~or~~ <sup>and</sup> go down together...

...to grow, change, <sup>and</sup>

mature <sup>to</sup> or expand...

...that the present course... <sup>and</sup>

60:

Prepositions (Phrase Markers)

...<sup>from</sup>through his teeth...  
 ...<sup>in</sup>to the front...  
 ...looking down at his legs...  
 ...he returned <sup>in</sup>to the room...  
 ...holding the ice pack with <sup>in</sup>both hands...

60:

Verb Particles

...passed on the message...  
 ...taking off the shoes...  
 ...pulling <sup>up</sup>out the plunger...  
 ...<sup>of</sup>trying to think the thing out...

60:

Clause Markers

I could see <sup>that</sup>he was awake...  
 ...the thing that <sup>lying</sup>lay there...  
 ...<sup>when he was</sup>while we here...  
 ...so that it would  
 ...and <sup>which</sup>that was something...

61:

...had seen through the...  
 sophistry...  
 ...<sup>from</sup>of our inhibitions...  
 ...<sup>in</sup>to the present system...

61:

...<sup>in</sup>suck his intellect...  
 ...draining the novocaine out...

61:

...as if they were...  
 ...<sup>after</sup>once a moment is gone...  
 ...<sup>that</sup>find we are in 2001...

Subject 181's ability to produce complex miscues which remain semantically acceptable shows a concern for meaning which is also reflected in her successful corrections. The main difference in reading the two stories is the unfamiliarity of many concepts and terms. Her response is more careful reading but with less effectiveness. More miscues must go uncorrected since she is not always able to get to the meaning. Syntax is not a particular problem. 74% of her miscues are fully acceptable syntactically in 61.

Subject 179 stands out from the group on both stories but most clearly on 61. In 60, in which he produced 2.20 residual MPH, he does a lot of minor editing, often bringing deep structure elements to the surface:

...before you come <sup>near me</sup> nearer.

...taking <sup>off</sup> the shoes..

...it won't bite <sup>you</sup> unless...

He shows a considerable phonological dialect influence and sometimes other aspects are affected by dialect:

...tell me where <sup>did</sup> it <sup>bite</sup> bit you.

He was holding <sup>himself</sup> himself...

In a number of cases subject 179 makes miscues that suggest difficulty keeping antecedents straight because they involve pronouns:

You've We've got to be quick...      ...into <sup>you</sup> him...

He We went...      ...in the eyes...      ...<sup>my</sup> his ear

I couldn't do that... <sup>it</sup>

These examples are all from 60. There are none from story 61, which uses virtually all first person pronouns.

Semantic acceptability drops for this subject from 45% on 60 to 9% on 61. Syntactic acceptability drops to 41% from 71%. That's 30% below any other 8H reader on 61. His correction rate is slightly higher on 61 than 60 but still is only 9%. MPHW is 4.25 on 60, which is a bit lower than subject 181, but jumps to 8.31 on 61 (181 goes only to 5.13). Residual MPHW is 2.20 on 60 and 7.59 on 61. Subject 179 makes no more miscues than subject 181 on the easier task, but loses the meaning more. On the harder task, this evidence of lower proficiency is made much clearer as miscue quantity increases while quality is dramatically lower.

Subject 179's non-word substitutions on story 61 are numerous, usually with high graphic and phonemic proximity.

OR \$dementures	OR \$kinasim	OR \$disindents
ER debentures	ER cynicism	ER dissidents

OR \$combulsion	OR sysetic
ER combustion	ER synthetic

He also has a number of word substitutions which are semantically

acceptable in parts of sentences (in 61) but not always in the entire sentences.

...force <sup>(c)</sup>the <sup>youth</sup>young to stop...

...rocking the entire <sup>world</sup>country...

"<sup>banned</sup> <sup>obsolete</sup>planned obsolescents" can no longer run the country...

...allowed to <sup>affiliate</sup>asphyxiate us...

...shock-proof <sup>water</sup>gold watch...

The reader is still working with meaning, but losing too much to get through the deep structure to the meaning of the whole.

This young man's tendency not to correct even when meaning is lost shows in 60 in a few places where miscues cluster.

...I couldn't help <sup>but</sup>it, <sup>my</sup>and I stared at <sup>(his)</sup>stomach...

I put my mouth <sup>against</sup>almost on <sup>my</sup>his ear.

In story 61, such examples are complicated by frequent non-word substitutions:

...many of today's <sup>the day's</sup>adults will <sup>eventually</sup>eventually join

with their children in the <sup>fighting</sup>fight <sup>(against)</sup>the

<sup>mean</sup>men with <sup>gobiters</sup>gobiters and <sup>cerebrus</sup>cerebrus.

He will sometimes make two or three attempts at a single occurrence of an unknown word, but he is not consistent in doing so.

Again the main contrast between these readers is their ability to get to meaning as shown by the semantic acceptability of their miscues or their correction of unacceptable miscues. The greater difficulty with unfamiliar words shown by subject 179 on 61 indicates his lower efficiency in getting to the meaning. Some of the others can get the gist of the meaning even though an occasional unfamiliar word pops up. This reader can get phonically close but is less able to get any syntactic or semantic cues from context.

High Proficiency Tenth Graders: 10H

The 10H group consists of five subjects, one Black male, one Black female, one White male, and two White females. Their scores on the California Test of Mental Maturities are reported to be 110 to 134. This group, like the 8H, 10IA, and 10HA, read stories 60 and 61. Also like the other groups previously mentioned, the 10H readers performed differently on the two different tasks.

All members of this group show that they are focusing on meaning, though they are more successful in story 60 than in 61. Their attentiveness to both syntactic and semantic cues results in very few miscues per hundred words, optional or very minor transformations stemming from the substitution, insertion, and omission of function words, a fair amount of synonym substitution, and a strong tendency to correct unacceptable miscues. Some unacceptable miscues are not corrected, but rather the reader accommodates with another miscue later in the sentence which then makes the first miscue acceptable.

Subject 251 has in his reading of 60 a number of such re-phrasings to compensate for prior miscues.

He  
His eyes looked down along his body...

...his whispering wasn't disturbing the thing that <sup>was laying</sup> lay there.

Ganderbai glanced up sharply, <sup>watching</sup> watched him for a few seconds, <sup>and</sup>  
then went back to his business.

...memories of white coated nurses and white surgeons in  
a white room around <sup>along the</sup> a long white table.

Subject 254 and 255 also provide examples:

I put the bottle right into his hand, <sup>Not</sup> not letting go till  
I was sure <sup>that</sup> he had a good hold on it.

I had to lean close to <sup>him to</sup> hear him

I watched <sup>as</sup> his fingers as they tugged gently...

I knew <sup>what</sup> it was going <sup>on</sup> in because the visible part of it  
grew shorter.

The first priority, of course, will be to reincarnate <sup>the reincarnation of</sup>  
the political system.

Optional transformations which in fact require no such  
accommodation or correction are common among the members of the 10H  
group, as are very minor transformations involving function words.  
These examples of omissions come from subjects 251 and 254:

...we will have to start looking inward.

We will need to free ourselves of the stereotypes...

Tell him to keep quite still.

And these insertion examples from subjects 252 and 254:

...then continued for a while after <sup>he'd</sup> he finished speaking.

...except sometimes when you catch it <sup>all</sup> at once.

...he...walked to the screen doors that led <sup>and</sup> <sup>out into</sup> onto the  
veranda...

I could see <sup>that</sup> he was watching...

Like the 10HA readers, the 10H group members make a number of  
miscues involving reversals in 60, indicating that they are reading  
beyond the word level and handling larger units of syntax and  
meaning:

I will have waked up <sup>the boy up</sup> my boy...

I think the best thing (to do is) for me...

...try to suck (the venom) out...



...the krait could have felt even the faintest  
vibration.

Subject 256 in particular brings to the surface structure of 60 many optional elements which are a part of the author's meaning but which are left in the deep structure. These elements especially include pronouns:

I pushed the door right open and <sup>I</sup><sub>^</sub> started to go quickly  
the room.

Then out of the corner of my eye <sup>I</sup><sub>^</sub> saw this little  
krait.

Thought it would go over <sup>the</sup><sub>^</sub> top of the sheet.

<sup>are</sup><sub>^</sub> You not in bed yet?

Subject 256 also omits these optional pronouns:

I swear it.

I raised my thumb, giving him the OK signal.

Successful prediction of meaning from semantic cues often results in synonym, or near synonym, substitution. Subject 256 makes such miscues:

He <sup>struck</sup> stuck the needle through the rubber top of the bottle.

Harry's smiling muscle <sup>began</sup> started to twitch.

I had the feeling that <sup>somebody</sup> someone was blowing up a huge  
balloon.

His eyes looked down <sup>over</sup> along his body...

Subject 254 offers this example:

You're not going to go spoiling <sup>things</sup> this now...

It is important to note that these synonym substitutions come from the easier reading task of story 60. The 10H readers, while appearing quite similarly proficient with this material, do not read so uniformly smoothly on 61.

On 60, these readers M<sub>PHW</sub> scores range from 1.44 to 2.88, and their residual M<sub>PHW</sub> scores range from .26 to .67. The subject with the highest M<sub>PHW</sub> score (2.88) is also the subject with the lowest residual M<sub>PHW</sub> score (.26), subject 256. This is due to his high percent of semantically acceptable miscues, rather than to his rate of correction. His semantic acceptability score is 83.6%, while others in the group range from 58.7% to 72.7% of their small number of miscues. He corrects only 14.5% of his miscues, however, with group percents ranging from 9.1% to 27.9%. Subject 256 also has the highest rate of syntactic acceptability on 60: 87.3%, while other group members make scores from 69.8% to 83.6%. So, while this reader is making more miscues than other members of the 10H group and correcting only a moderate percentage of these, he needs to correct less because of his extremely acceptable miscues; his comprehending score is the highest for the 10H60 group, 90.9%. It is, in fact, this subject who has a fair number of synonym substitutions, and who brings to the surface those deep structure elements which the author deleted.

Subject 256 looks quite different when compared with other group members on story 61, however now his comprehending score is the lowest for the group, instead of the highest: his score is 50%, where others range from 55.3% to 93.9%. This low comprehending score is due to the fact that only 2% of his miscues are semantically unacceptable but corrected. The mean semantic acceptability for the 10H group is 54.36% on 61, the range is 45.2% to 69.7%. Subject 256 has a semantic acceptability score of 48%. As on the easier reading task, subject 256 has a higher M<sub>PHW</sub> than other group members: 4.41, with other scores ranging from 2.31 to 3.06. He does not produce miscues that are so extremely semantically acceptable however; his correction rate drops considerably, and he is left with the highest residual M<sub>PHW</sub> and the lowest comprehending score for the 10H group. At the same time, his syntactic acceptability score becomes the second highest in the group, 88%, demonstrating that it is not the grammatical complexity which he has trouble with. These data from story 61 make subject 256 look very similar to the 10HA readers performing on the same task. He does not have sufficient competence to deal with the harder task with comparable effectiveness.

Subject 255 responds to the more demanding reading task in a manner very similar to subject 256. Her semantic acceptability is neither high nor low (52.4%), but so few of her miscues are semantically unacceptable but corrected (2.6%) that her residual M<sub>PHW</sub> is the second highest in the group, 1.23 (which of course is still quite low). Her total correction, however, is 18.4%, meaning that she corrected a fair number of acceptable miscues, an inefficient reading strategy considering that she left uncorrected some unacceptable ones. Like subject 256, her syntactic

score is exceedingly high, the highest for the group: 89.5%. This is particularly interesting since her syntactic acceptability score was the lowest for the group on the simpler story: 69.8%. Both these subjects are handling syntax more carefully as they encounter greater difficulty with semantic cues.

In contrast to both subjects 255 and 256, the other three members of the 10H group correct at a much higher rate in 61, and one of them (254) produces over 10% more semantically acceptable miscues than any other 10H reader: 69.7%. The result is that the comprehending scores of these three range from 75% to 93.9%, the lowest score being 21% above subject 255 and 26% above subject 256. Their residual MPHW scores, of course, are consequently lowered: they range from only .15% to .75.

These subjects' response to the complexity of the magazine article was correction, specifically, correction of unacceptable miscues. Subject 251, for example, corrects 45.2% of his miscues; 31% of his miscues are semantically unacceptable but corrected. These readers do not, however, respond by sticking as closely to the syntax of the text as do subjects 255 and 256, and therefore have lower syntactic acceptability scores: 69.7% to 78.1%. The lowest syntactic acceptability score on 61 belongs to the reader with the lowest residual MPHW (.15) and the highest comprehending score (93.9). These subjects go beyond deep structure to meaning and sometimes change the pattern in doing so. Both 255 and 256 tend to manipulate and preserve structure in some of their miscues while losing meaning.

The value of the dual reading task is therefore apparent: all 10H readers are both highly effective and highly efficient on the story of average difficulty, yet two readers are notably less able to get to meaning in handling the more difficult task. Secondly, in this dual reading task, both percent of correction and percent of semantically acceptable miscues before correction become the most legitimate indicators of true reading proficiency.

These highly proficient tenth graders surely represent a level of competency in reading which many adults do not attain. Their performance must be considered representative of the level which schools seek to help their pupils achieve. It is most interesting then that these readers show, particularly on story 60, efficient, effective use of graphic, syntactic, and semantic cues. They get to meaning and recover meaning through correction when they don't.

Their miscues are few but the quality of those they produce suggests that meaning is their goal and their relative accuracy is a by-product of their efficient processing of information and not a cause for their effective comprehension. Good readers make fewer and better miscues.

When the process is strained as it is in story 61, the readers appear to be unequally competent to handle the strain. Those less able to get meaning become graphically more accurate and handle syntax very carefully, in some cases as if it were nonsense. It is likely that those who could handle story 61 without loss of effectiveness might react similarly in another reading task which strained their competence because of its conceptual complexity.

From our 2L readers to our 10H, the reading process (what a reader must do to attain meaning), does not change. Readers vary rather in their ability to integrate graphic, semantic, and syntactic information to get to meaning. The proficient reader gets the most meaning with the least effort. It is the progress toward this ability to maximize comprehension while minimizing effort which our studies have documented.

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## APPENDIX A

### USING THE MANUAL

#### Purpose and Organization

The Manual for the Use of Miscue Analysis is intended for the researcher interested (1) in pursuing a reading miscue study or (2) in making an indepth analysis of the results of such a study. It is assumed that the person making use of the Manual will have acquired elsewhere a familiarity with the theoretical position which supports such research.

The Manual is meant to make explicit those processes which are necessary to actual implimentation; research procedures, categories of analysis, category parameters, data analysis procedures, computer processing.

The heart of the Manual is composed of the Goodman Taxonomy of Reading Miscues with its 18 categories of questions. These questions provide the focus for the research and represent the aspects of the language and thought processes which are tapped for analysis. Other chapters of the Manual are devoted to application and procedure for use of the Taxonomy.

To facilitate the purpose of implimentation the Manual has been organized to match the actual sequence of events of a research project.

#### Kinds of Studies

The Taxonomy is not suited to studies using a large population and a data sampling procedure. The coding of the miscues of an average reader calls for approximately 2000 separate decisions and provides for an indepth examination of the reading process.

The miscue procedures are designed for intensive analysis with small groups of readers who have been selected on the basis of shared characteristics. Grade level placement, I.Q. score, dialect, reading achievement, age, race, reading comprehension, and cognitive style, are all examples of characteristics which can be singled out to offer focus for a study. Or, the focus can be placed upon a particular aspect of the reading process as it relates to other factors. The use of graphophonic cues, the involvement of grammatical transformations, the relationship of syntactic change to semantic change demonstrate such possibilities. In some cases an increased number of subjects might be used when the narrowed focus allows for only the use of selected Taxonomy questions.

## TAPING THE READER

### Selection of Reading Materials

Four main criteria are used in choosing material: (1) the selection must be one which the reader has not previously seen or heard, (2) it must be sufficiently difficult to generate a moderate number of reader miscues, (3) it must be of sufficient length to insure the availability of syntactic and semantic context to the reader, and (4) the selection must be a semantically complete unit.

The use of "new" material helps insure that the situation is, in fact, one of reading and not the result of rehearsal or memorization. The subject must then deal with this unique reading situation on the basis of his available reading strategies.

At the same time the material must be sufficiently difficult to cause the reader to miscue. A minimum of approximately fifty miscues generated during a twenty minute reading session can be used as a guideline. Too few miscues will not provide sufficient evidence of the reader's use of the reading process. There is a great deal more leeway concerning any maximum number of miscues generated. A large number of miscues should not cause the researcher to abandon the material unless the reader becomes agitated and is unable to continue independently.

While the materials should be short enough to be read at one session, they must also be long enough to provide sufficient syntactic and semantic context for processing.

Previous miscue research (Menosky, 1971) has indicated that the quality of miscues changes as the reader progresses past the initial portion of text. Miscues made on the first 200 words of text produce a different reader profile than those associated with any given quarter of text examined. This difference is related to an increase in semantic and syntactic acceptability with an accompanying drop in graphic and phonemic similarity on the sections following the initial portion.

During the initial portion of text the reader must depend heavily on his own background and his own language structure. Information on the author's use of structure and story related information are increasingly available to the reader as the reading progresses. Full use of a reader's strategies depends upon the availability of a fully developed syntactic and semantic context.

Either story or informational (social studies, history, geography, etc.) format materials can be used. The choice of specific material kinds will be based on the needs and concerns of any specific piece of research. Factors to be taken into account when selecting material include: the development of theme and plot, the clarity and complexity of the

concepts involved, the language and experiential background of the research subject.

Relating the factors of the need for a minimum of approximately fifty miscues, the average number of miscues generated per hundred words of text, and the quality of miscues made within the first 200 text words, a text should contain a minimum of approximately 500 words. There is also a relationship between maximum text length, the length of reading time, and the size of text necessary to provide a whole semantically developed unit. The entire selection is read so that complete understanding of the content is possible. Twenty minutes is an average reading time for the primary school reader, with reading time going up to approximately forty minutes for the high school and adult reader.

Because the quality of a reader's strategies alter with the availability of semantic context, concern should be given to the semantic unity of the material. In general, story format material should have a complete theme, plot, and storyline. Informational material should adequately develop a concept or fully describe an act.

When the parameters of time and semantic unity are both considered it frequently becomes necessary to provide a sequence of two or three related stories for younger readers and to use short stories, chapters, magazine or journal articles for older readers.

While adequate material selection is basic to the successful use of miscue analysis it is tied to a series of partially indeterminate factors. It is therefore usually helpful to have two or three selections of varying difficulty and/or content available for use. When working with average elementary school age children one "rule of thumb" is to make the initial material selection one grade level above the reader's assigned grade.

### Physical Arrangements and Materials

The physical requirements of the research are minimal. The entire reading session should be recorded on audio tape so that a complete and permanent record is available. The taped recording will be used repetitively throughout the research process. It will be replayed, in its entirety, in making an official worksheet copy (see pages 6-14), selected portions will need to be replayed during the miscue coding when possible intonation variations can act as cues to the grammatical function of items in ambiguous structures, and any retelling or discussion of the reading will need to be replayed if a comprehension rating is used (see pages 109-110).

Any kind of reel or cassette tape recorder can be used as long as it provides clarity and range of tone. It's often helpful to use a recorder which has at least two speeds. If the faster speed is used during the recording session the slower speed can be put into use later for listening to minor variations of intonation or phonemes.

Once started the reading should be uninterrupted and free of major

background disturbances. This should be the main concern in selecting a time and place for taping. Aside from this consideration all that the reader and the researcher need is a comfortable chair and desk or table on which to place the reading and taping materials.

When possible the subject is asked to read from the printed version of the selection. This avoids the occurrence of any miscues made due to blurred, fuzzy, or faint print. While the subject reads from the book, the researcher uses a prepared worksheet copy of the selection to note miscues as they occur. This worksheet copy retains the physical characteristics of the book that is being used by the reader. Length of line, spelling, and punctuation are accurately retained, and end-of-pages noted. Spaces between the lines of the text are left wide enough for the researcher to clearly write in all miscues.

Because of the speed with which reading takes place this initial marking will not be totally accurate. But, the on-the-spot markings will sometimes facilitate later decisions on items which are hard to hear on the tape.

After reading, the subject is usually asked to retell what he has just read. In order to guide the retelling, the researcher should have an outline of the material. Story material outlines should include character analysis, events, plot and theme. Informational material outlines should include specifics, generalizations and major concepts.

### Procedures

All of the materials - reading selection, worksheet copy, retelling outline - should be prepared and the audio tape equipment checked for performance and sound level before the session begins.

The reader should be informed about the nature of and reason for the task. He should be told that he will receive no help, and that no teaching will occur. He should further be informed that he is sure to encounter structure and content which he will find either unfamiliar or difficult. At such points he is to use whatever reading strategies he can and to proceed with the reading.

The reader is then asked to orally read the pre-selected material, and this performance is recorded on audio tape. During this taping the researcher notes all miscues on the worksheet copy of the story.

Upon completion of the oral reading, the subject can be asked to retell, to the best of his ability, what he has just read. This portion of the task is also recorded on audio tape. The subject's retelling should be uninterrupted by comments or questions from the researcher. The retelling outline can be used at this time to keep track of the points covered during the retelling. When the reader has exhausted his initial responses to the material the researcher can then ask questions in regard to aspects of the material which the reader either ignored or covered in-

sufficiently.

When asking questions the researcher must not use any specific information which has not already been provided by the reader. For example, if the reader says, "The little boy had a toy" the researcher cannot ask, "How did Billy feel when his train was broken?" This question provides the reader with information which he might not have already assimilated during his reading.

Any mispronunciations or name changes made by the reader must be retained by the researcher during the questioning. If a reader says, "The men thought the cannery (canary) was dead," the researcher must also say cannery if he asks a question which includes that word. General questions such as "What happened next?", "How did that happen?", "Who else was in the story?", "Where did the story take place?", "Why do you think the author wrote the story?", etc...may also encourage further responses from the subject.

The purpose of the retelling is to gain the reader's unprompted view of the material.



## APPENDIX B

### DEVELOPING OFFICIAL WORKSHEET COPIES

#### Initial Worksheet Copy

A worksheet copy is produced during the taping session (see Taping the Reader) and reflects the reader miscues that the researcher has been able to record while observing the actual reading. This initial record is incomplete due to interruptions, the speed of the reader, and the occurrence of multiple miscue sequences. At the same time, it has one strength. Because the marking is made during the actual reading, it tends to more accurately record miscues which involve minor phonemic variations and/or portions of the reading which are difficult to hear on the audio tape.

#### Official Worksheet Copy

The tape of the reading and the initial worksheet copy are used to produce an official copy from which the reader's miscues will be keyed. There are two alternate procedures for developing an official copy.

- A. In order to establish listener reliability and provide training the following procedure can be used:
  1. Two researchers listen to the tape independently and produce individual Worksheet Copies of the reading.
  2. The two copies are compared. Points of difference are resolved by replaying the involved sections of tape and by consulting the initial worksheet markings. Where necessary, a third listener is called in to resolve differences.
  3. During the process of comparison, the markings on one of the worksheets are corrected and this copy becomes the Official Worksheet Copy.
  4. The person keying the miscues plays the tape through completely once in order to make note of intonation relations which can not be adequately represented through use of punctuation marks.
- B. When reliability has been established a more economical procedure can be used.
  1. An experienced listener plays the tape and marks a worksheet copy.

2. The markings on the initial copy are compared to this second copy and a second listener is called in to assist with difficult passages. The second copy becomes the Official Worksheet Copy.
3. The person keying the miscues plays the tape through completely once in order to note intonation relations which can not be adequately represented through use of punctuation marks.

### Marking System

The Official Worksheet Copy should contain all variations from the Expected Response that the listener has been able to detect. Phonemic, vocabulary and structural differences will all be noted without regard for whether or not they later will be treated as miscues or ignored (see Determining What Is A Miscue).

The Observed Response can vary from the Expected Response in five physical ways: insertion, omission, substitution, reversal and regression.

#### Insertions:

An item(s) is added to those already in the text. A caret (^) is placed at the point of insertion and the addition is printed in above the line of text.

Mr. Barnaby was a very busy<sup>business</sup>^man.

"We are happy here," Toy<sup>S</sup>^Kitten said.

He heard a little moaning c.<sup>ing</sup>^A

In instances where there could be confusion, the insertion plus the related item can be written in above the line of text.

One spr'ng day Billy's  
Billy's  
Billy was walking through the woods.

#### Omissions:

An item(s) is deleted from those in the text. The deleted portion is circled.

I'm going to drop this light down (to you) through the transom.

Elizabeth was wait'ng for him at the (front) door.

Mr. Barnaby was a very busy man.

But what his mother called him depended on what he had done last.

It was fun to go to school. When he wasn't in school, he skated with his friends on the river ice.

#### Substitutions:

An item(s) is substituted for one in the text and is written in above the line of print.

The <sup>rat</sup> cat was in the closet.

I don't remember what Mr. Barnaby said during the <sup>television</sup> program.

Then Billy <sup>had</sup> and his father built a summer house.

He <sup>tried to</sup> tied the sticks to the broken leg.

When partial words are substituted for text words, the portion produced is followed by a hyphen.

Soon he returned with two straight sticks and some <sup>st-</sup> string.

Billy Whitemoon was a <sup>Winneba-</sup> Winnebago Indian boy.

#### Reversals:

The relative position of a text item(s) is altered. A curved line indicates the changed position.

- A. The positions of two items are reversed.

"Oh please!" Billy cried.

- B. The position of one item is changed.

He ran home rapidly.

#### Regressions:

Portions of text can be repeated. A line is drawn under the line of print from the point at which the reader stops to the start of the repetition.

Regressions occur and are coded in relationship to other reading phenomena. Symbols placed in the circle indicate the assigned relation-

ship. The regression codings are used to answer the first taxonomy question.

- A. When the reader repeats in order to successfully alter an initial OR and make it identical to the ER, the regression is marked (C) -- correction.

(C) <sup>the</sup>  
Then he noticed that this one's leg was broken.

(C) We  
He will make a good pet.

(C) sh-  
She made her own paints.

(C)  
He saw the circus tents.

The initial reading of circus gave it noun stress. In order to handle tents, the reader regressed and reread circus with adjective intonation.

(C)  
It was fun to go to school. When he wasn't in school he skated with his friends on the river ice.

The initial reading made when he wasn't in school a dependent clause of the first sentence.

- B. When the reader repeats in an unsuccessful attempt to alter an initial OR and make it identical to the ER, the regression is marked (uc) -- unsuccessful correction.

(uc) Ted  
All  
Tell me what you see.

reader said: 1. All...  
2. Ted me what you see.

(uc) He heard a little <sup>mewing</sup> <sup>mowing</sup> moaning cry.

reader said: 1. He heard a little mowing...  
2. He heard a little mewing cry.

- C. When the reader repeats in order to replace an initial OR which is identical to the ER with one which is not identical, the regression is marked (AC) -- abandons correct form.

(AC) I  
You can't prove it.

reader said: 1. You...  
2. I can't prove it.

(AC) Here's  
"Here, (take) one," said the man.

reader said: 1. "Here...  
2. "Here's one," said the man.

(AC) "Where are you?" he shouted. "In <sup>in</sup> the hall closet!" came Elizabeth's tearful reply.

In regressing, the reader makes the second occurrence of direct speech a part of the dialogue carrier of the previous speech.

- D. When the reader regresses, not in order to change the item(s) repeated, but to attack material which is coming up in the text, the regression is marked (RS) -- running start regression.

(RS) When his father saw the fawn, he said, "What a beauty!"

The attempt is to attack the word fawn.

(RS) "You win!" said the hunter.

The structure of the syntax is causing the reader difficulty.

### Multiple Regressions and Longer Text Sequences

When a sequence of regressions occurs for one word each attempt will be listed in order and numbered.

By accident Freddie's next experiment was in a field that had nothing to do with chemistry.

3 feel  
2. filled  
1. fill

reader said: 1. By accident Freddie's next experiment was in a fill...  
2. filled

3. feel
4. field that had nothing to do with chemistry.

<sup>(c)</sup> 2. He  
 1. He  
 I made a special mixture.

- reader said:
1. He...
  2. He
  3. I made a special mixture.

<sup>(c)</sup> 2. shouted  
 1. rounded  
 It sounded like a fire engine.

- reader said:
1. It rounded...
  2. ...shouted like a fire engine.

When text sequences longer than one word are involved, the researcher must make some judgements concerning the relationships between the ER and the OR.

<sup>(c)</sup> Na-  
 ...installed (Ralph) Nader as the president of General Motors and Tommy Smothers as the head of CBS,...

- reader said:
1. installed Na-
  2. installed Ralph Nader...

The partial word OR must be used as evidence that the reader was attacking Nader and not Ralph.

I couldn't understand about <sup>(c)</sup> taking off <sup>my sh-</sup> the shoes...

- reader said:
1. ...taking my sh-
  2. ...taking the shoes...

The reader's correction and the relationship between my/the and sh-/shoes helps make the determination to treat off as an omission.

<sup>may go and</sup> "Yes, you do not have to stay home," said his mother.
   
<sup>fun</sup>

May/do and go/not can be treated as word substitutions, and will be an insertion. But fun will be a substitution for the whole phrase to stay home.

When the reader makes phrase level regressions, it is possible for him to re-read only portions of the involved sequence. Dotted lines are

used for the portion of the regression not repeated.

<sup>(C) (RS)</sup> <sup>Barny</sup>  
Mr. Barnaby is a (very) busy man.

- reader said:
1. Mr. Barny is a busy
  2. Mr.
  3. Mr. Barnaby is a very busy man.

<sup>(RS) (RS)</sup> <sup>(C) not-</sup>  
Then he noticed that this one's leg was broken!

- reader said:
1. Then he not-
  2. noticed that this
  3. Then he noticed
  4. Then he noticed that this one's leg was broken.

A sequence of regressions and/or miscues can become so complex that there might be difficulty in interpreting the markings and their order of occurrence. In such cases, a notation which lists and numbers the reading attempts should be added to the margin.

<sup>change in 9.</sup>  
Freddie, trying to <sup>(uc)</sup> think <sup>and look,</sup> looked up at the small window.

1. Freddie, try to think up
2. think and look up at the small window.

<sup>(uc)</sup>  
Don't leave me alone. It's <sup>in this</sup> dark in here.

1. Don't leave me alone in this dark.
2. in this here.

<sup>(C) (uc)</sup> Then  
Now he had a flashlight.

1. He had
2. Then
3. Now he had a flashlight

<sup>(C) (RS) (RS)</sup> <sup>(uc)</sup> <sup>(C) (AC)</sup>  
Mr. Barnaby is a very busy man.

1. Mr.
2. Mr. Barny is very busy man.
3. Mr.
4. Mr. Barny is a busy man.

...hanging up <sup>(C)</sup>the <sup>(C)</sup>two <sup>(C)</sup>of <sup>(C)</sup>telephones into which he'd been talking. <sup>(C)</sup>them

1. hanging up two of
2. the two of them
3. the two telephones into which he'd been talking.

### Special Symbols And Rules

All miscues which sound like English words are to be spelled as those words. This rule operates without regard for any assumption which might be made concerning whether the reader recognizes the OR as a word.

We must resuscitate a physically and morally <sup>dilapidated</sup> depleted environment.

Young <sup>descendents</sup> dissidents have been widely berated.

It's impossible to do anything except <sup>vintage</sup> vegetate or die.

My time is very <sup>viable</sup> valuable.

So <sup>addiction</sup> education it was!

There are some instances in which the lack of word stress intonation is used to determine whether what is being read is a whole or partial word.

Then he <sup>not-</sup> noticed...

...the <sup>Wine-</sup> Winnebago lands...

...the <sup>can-</sup> ripe cranberries...

When an OR involves either a phonemic dialect variation or the production of a non-word, a dollar sign (\$) is used to indicate that the spelling, which follows represents a particular pronunciation. A spelling is created which retains as much of the ER spelling as is possible. If there can be any confusion over the pronunciation intended, a rhyming word can be placed in parenthesis next to the OR.

I sat in a large <sup>flarther</sup> leather chair.



<sup>§+ypical</sup>  
He wouldn't be typical if he didn't cry.

They picked cranberries near the <sup>§swaamp (stamp)</sup> swamp.

What his <sup>§cawed</sup> mother called him depended on what he did last.

<sup>§hep §wif</sup>  
I can help with little jobs.

In instances where the OR is produced in segments, or "sounded out," plus marks (+) will separate the portions.

<sup>phil+lo+soph+i+ca|</sup>  
"Did you say philosophical?"

I guess they do have a <sup>sooth+thing</sup> soothing sound.

I am not too <sup>lit+tle</sup> little to help.

He heard a <sup>rust+tle</sup> rustle in the leaves.

The hunter <sup>shout+ed</sup> shouted angrily.

Then mother <sup>laughed+ed</sup> laughed too.

His chemistry <sup>es+pair+aments</sup> experiments narrowed to those safely outlined in a library book.

In instances where intonation is the only difference between the ER and the OR, an equal sign (=) will be placed in front of the accented OR syllable.

You'll find it all there in the <sup>re=cord</sup> record.

They lack an alternative to the <sup>=present</sup> present system.

I <sup>=suspect</sup> suspect that the gap will widen.

## APPENDIX C

### INTERPRETING THE WORKSHEET MARKINGS AND DETERMINING MISCUES

Once variations from the text have been marked on the worksheet, two decisions must be made:

- 1) Will the phenomenon be treated as a miscue?, and
- 2) What relationships exist between the text variations?

#### Determining What is a Miscue

Not all variations from the ER which are noted on the worksheet will be treated as miscues. Reasons for excluding a phenomenon include the following.

- A. The purposes of a study do not require the necessity of inclusion of specific kinds of miscues.
- B. The difficulty involved in handling phenomena which represent partially completed structures.
- C. The decision that some phenomena, while they accompany miscues, are not themselves involved.

#### Excluding Miscue Kinds

Variations which fall within category A can be specifically excluded from designated studies by a set of instructions titled "Determining What is a Miscue".

A particular researcher might, for example, decide to exclude from consideration all phonemic level dialect miscues. Another researcher might choose to focus in on one specific phenomenon such as word level substitutions, or graphic/phonemic relationships, or dialect related miscues, and so might exclude all other variables, and all miscues which do not involve the variable under study.

#### Handling Partial Structures

Category B relates to the production of partial word and partial structure miscues. The taxonomy questions examine each miscue in relationship to the rest of the ongoing text. The intent is to note all possible relationships and involvements. These relationships are noted on the

basis of the subject's OR. The concern is that the researcher not impose his perceptions or his anticipations on the data. To this end the examination of partial structures is limited in the following ways.

1. Miscues which result in partial words only are treated as word level omissions.

Freddie nodded sadly.  
miscue: omission of sadly

Drop it through the transom.  
miscue: omission of transom

2. Partial word attempts which are corrected are not treated as miscues.

His father usually called him Tinker.  
miscue: none

"You what?" Mr. Miller asked angrily.  
miscue: none

3. When multiple attempts are made, the first complete word is treated as the miscue.

Yet, by accident he might discover a mixture that would changed the world.  
miscue: substitution of accent for accident

A scientist's life was filled with disappointments.  
miscue: substitution of disappear for disappointments

4. When a grammatical function can not be assigned to the OR word, the phrase and clause level categories can not be marked.

"You see," I said, "it helps..."  
to could be either a verb marker or a preposition

The issues have supposedly divided us in the past.  
The grammatical function of this non-word is indeterminate.

5. When either the ER or the OR does not progress as far as the verb phrase, the clause level can not be marked. This situation usually arises when the reader corrects prior to the verb phrase.

Take it away.

#### Phenomena Accompanying Miscues

There are three major categories of phenomena which are not treated as miscues: asides, regressions and pauses.

1. Asides are all oral breaks in the reading. Included are sounds such as "um-m-m", or "ah" which are used to mark time while the reader processes. Also involved are comments such as "I don't know that word" or "I'll just skip it" which are made either to the researcher or as part of a thinking aloud process.
2. Regressions or repetitions of text are demonstrations of the reader's awareness of miscues and his reprocessing attempts at holding them. While the regressions themselves are not a part of the miscue the effectiveness of any reprocessing related to the miscue is noted in the correction category.
3. Pauses in the reading probably represent a varying surface behavior for the same phenomena which cause regressions. That is, they represent those points at which the reader is aware of difficulty and is involved in reprocessing cues. In many instances they probably represent silent correction of a miscue. As we have no reliable way of measuring these silent corrections, pauses are not considered in answering the correction category.

#### Determining Relationships Between OR's

Two other decisions remain after having determined which variations from the text will be treated as miscues and examined through the taxonomy

Questions. They involve determining the length of the individual miscue and the complexity of the coding.

#### Miscue Length

The number of text variations which will be considered a part of one miscue is determined, not by proximity, but by syntactic and/or semantic interrelationship. Multiple variations will be treated as one miscue if one or more of the following situations is in effect.

1. The production of one OR causes the need for the next.
2. The two variations are so syntactically related that repetitive coding for the same phenomena would occur within one or more categories if the ORs were coded separately.
3. An OR causes a grammatical structure change in another text item without physically altering it.

Ted could not buy lace.

Bought is substituted for could not buy.

I bent over Harry and passed on the message.

Once gave was substituted for passed the use of him was necessary to produce an acceptable structure.

I carried the ice pack back to the bedroom...

After the cut in his allowance...

The miscue is he cut because the substitution of he for the causes cut to be changed from a noun to a verb.

There two men were signaling to each other.

With the insertion of were, there changes from an adverb to a function word.

There were glaring spotlights.

The miscue involves the substitution of was a glaring spotlight for were glaring spotlights.

He wagged a finger at Andrew and said, "Say da."

The substitution of to for and necessitates the change from said to say.

## Coding Complexity

Miscues can be identified in relationship to the level of complexity which will be called for in marking the taxonomy questions. A simple miscue can be defined as one which requires only one coding for each of the relevant taxonomy questions. In a complex miscue at least one of the taxonomy questions must be coded twice. The second codings which are necessitated are called sub-miscues.

The need for multiple coding is not necessarily tied to miscue length as can be seen in some of the following examples.

She nosed the cat huddle sleeping on the canvas flap.  
The bound and combined morpheme category must be coded twice to reflect the insertion of both -en and -ed.

"Get some serum into him," he said.  
The word level, phrase level, and grammatical function categories must be coded twice to reflect both omissions.

He helped my mother with her coat.  
The graphic, phonemic, submorphemic, bound and combined morpheme, word and free morpheme, phrase and grammatical function categories must be coded twice.

## APPENDIX D

### THE GOODMAN TAXONOMY OF READING MISCUES

On the following pages each of the eighteen categories of the taxonomy are briefly outlined and examples are given. There are some limitations placed on the examples used.

1. There is no consistent way of representing the intonation which has caused us to make specific keying decisions. In some cases punctuation markings and/or the changing grammatical function of the ER items will serve as partial indicators.
2. All of the examples presented contain only one miscue per sentence. While this situation does not always exist in continuous text, it does serve to focus attention within the examples.
3. All of the examples (with the exception of those in the correction category) are presented as if they were not corrected. This is the state in which the ER sentence must be read to answer the taxonomy questions.
4. All of the examples represent miscues made by children studied in the research. In the instance of a couple of sub-categories we have been unable to supply examples.

#### 1 CORRECTION

A reader can produce a miscue and be totally unaware that he has varied from the text. In such instances the reading will continue uninterrupted.

When the reader does become aware of a miscue, he can choose to correct either silently or orally, or he can choose to continue without correcting.

Uninterrupted reading at the point of a miscue can be related to the reader's lack of awareness of the miscue, his use of silent correction or his conscious awareness that he is unable to handle the variation. We have no consistent method devised for distinguishing between these possibilities.

It is possible to note some silent corrections by paying attention to pauses in the reading, by checking miscues made during repeated occurrences of the same word in text, and by comparing miscues made during the reading with successful usage during the oral retelling.

Because our proficiency in identifying silent miscues is sufficient to substantiate their existence but not to accurately tally their occurrences the correction category is used only to tally oral correction occurrences.

The occurrence of a correction or correction attempt is evidence that the reader feels he has made a miscue. In order to correct a reader must repeat material which has already been read. The length of the repetition (whether it involves one or several words) can provide a cue to when the reader became conscious of the miscue and/or the point at which he was able to determine the word.

It is possible for the correction attempt to occur further on in the text either due to repeated occurrences of the word or to the developing semantic context of the reading. Corrections that occur across structures and not with near immediacy to the miscue occurrence will not be coded in this category.

In no time at all Sven's pet was everybody's <sup>pup</sup> pet.

pup for pet is coded 1.0 (not corrected)

When a complex miscue is involved, the correction category must be keyed on the main line of the miscue only.

He had a smile <sup>small one</sup> on his face.

The miscue is small one for smile on and is coded 1.9 (unsuccessful correction)

0 No attempt at correction is made.

She pounded the young tree into long strings.

When  
Then he picked up the fawn and carried it home.

When warm weather came, <sup>to</sup> the Whitemoons moved to their summer camp.

1 The miscue is corrected.

<sup>Not</sup>  
No one had ever heard Billy's songs.

One of the things he liked most was <sup>canberry</sup> cranberry picking in the fall.

<sup>the</sup>  
Then he noticed that his one leg was broken!

<sup>We</sup>  
He will make a good pet.

2 An original correct response is abandoned in favor of an incorrect one.

<sup>I</sup>  
<sup>You can't prove it!</sup>  
"You can't prove it!" the hunter said.



- 9 An unsuccessful attempt is made at correcting the miscue.

Then they <sup>UC</sup>crowled<sup>2</sup>  
<sup>CF-</sup>crowned<sup>1</sup> into the car.

Then they <sup>UC</sup>creeped  
<sup>CF-</sup>crowded into the car.

**Additional Notes:**

Terminal punctuation can be assumed to be corrected when the reader adjusts the intonation of the following structure.

We had just never had any pets until Sven Olsen  
decided <sup>1</sup>he wanted one.

Freddie nodded sadly <sup>2</sup>Sometimes he thought that a  
scientist's life was filled with disappointments.

**2 DIALECT**

Dialects of a language vary from each other through phonemes, intonation, vocabulary and structure. Phonemic and intonation variation almost never result in any meaning or structural changes. Only dialect miscues which involve vocabulary or structural changes will be coded in this category.

For specific sub-studies phonemic dialect variations can be coded on the Multiple Attempts Taxonomy and under the secondary dialect influence and doubtful sub-headings of the general taxonomy.

In sub-studies which record phonemic variations use a spelling which approximates what was said while retaining as much as possible of the ER spelling. This representation is preceded by a dollar sign (\$). (See Coding the Observed Response.)

In all other studies, the general rule of thumb is to accept the wide range of phonological variants found in communities as within the limits of the expected response and hence not miscues.

When a miscue has been marked DIALECT it can not be coded under ALLOLOG.

- 0 Dialect is not involved in the miscue. The OR is not recognizable as a distinguishing feature of a specific group of speakers.
- 1 Dialect is involved in the miscue. The OR is recognizable as a vocabulary item or structure which is a distinguishable part of the speech system of an identifiable group of speakers.

ER But the woman said to him, "Do not go."  
 OR But the woman, she, took him, "Do not go."

ER I don't have any pennies. ER He is a funny pet.  
 OR I don't have no pennies. OR He a funny pet.

ER Neither of us was there.  
 OR Neither of us were there.

Bound morpheme differences of inflected words. Dialect miscues involving bound morphemes will be treated graphically as having a standard spelling /help/ and /helpɪ/ are both spelled helped and morphophonemically as having null forms of the inflectional endings. The absence of an ending is itself a signal. Hence, help ( ) for help(ed) is a substitution rather than an omission.

ER helped	ER Freddie's	graphic 3.9
OR hɛlp	OR Freddie	bound & combined morpheme 13.11
		word & free morpheme 14.18

Bound morpheme differences of noninflected words. Some words register tense or number changes internally (woman/women) while others have neither inflection nor internal changes (sheep/sheep). It is possible for the reader to become confused over what constitutes the root word (present tense of a verb, singular form of a noun). Where this confusion is habitual to a particular reader it will be marked idiolect (2.2). Where it is habitual to a group of people, it will be marked dialect (2.1). In these instances the reader does not change tense or number by his miscue.

ER sheep	ER women	dialect 2.1 or .2
OR sheeps	OR womens	bound & combined morpheme 13.17

In other instances the reader is not confused over what the root word is, but simply applies alternate rules in order to produce tense or number changes.

ER women	ER men	ER drew	dialect 2.1
OR woman (pl.)	OR mans	OR drawn	bound & combined morpheme 13.12

- 2 Idiolect is involved in the miscue. The OR is recognizable as a vocabulary item or structure which is a distinguishable part of the speech system of the reader. It is an example of his own personal dialect but will not be a part of the patterns of his speech community.

ER Elizabeth	ER library	ER refrigerator
OR \$Lizabit (phonemic)	OR \$liberry (phonemic)	OR \$frigerator (morphemic)

- 3 A super correction is involved in the miscue. In some instances a reader intentionally uses a word pronunciation which he views as being acceptable regardless of the pronunciation he habitually uses

in speech situations. This can be a reflection of what he hears or thinks he hears in other's dialects. It can be a school taught pronunciation which is an attempt to use a reading dialect or a supposed literate form.

ER kitten	ER frightened	ER a tree	ER the man
OR kit+ten	OR frighten+ed	OR ā tree	OR thē man

ER started  
OR start+ted

This category will be used on the Multiple Attempts Taxonomy for sub-studies which include phonemic dialect variations.

It will also be used on the general taxonomy if an example of super correction which includes structural changes can be identified.

- 4 There is a secondary dialect involvement in the miscue. The OR which the reader produces involves a variation which can be identified as dialect, idiolect or super correction.

ER ...learning the ways of the range and the work of a sheep dog.  
OR ...learning the ways of the range and the work of coming a sheep dog. (coming is an idiolect variation for becoming)

ER Why were there no coyote fires at night?  
OR Why were not no coyote fires at night? (not no is a dialect form)

ER I could see he was watching to make sure his whispering wasn't disturbing the thing that lay there.  
OR I could see he was watching to make sure his whispers wasn't disturbing the thing that lay there. (whispers wasn't is a dialect form)

**Additional Notes:**

This category is used on the general taxonomy only for sub-studies which include phonemic dialect variations or if an example of secondary dialect involvement which includes structural changes can be identified.

- 5 A foreign language influence is involved in the miscue. The reader applies to an English word the phonological rules of an alternate language which he speaks.

ER chair	ER busy
OR \$shair (French influence)	OR \$bissy (French influence)

This sub-category will be used on the Multiple Attempts Taxonomy for sub-studies which include phonemic dialect variations.

It will also be used on the general taxonomy if an example of foreign language influence which includes structural changes can be identified.

- 9 Dialect involvement is doubtful. There is a lack of conclusive information on which to make a definite decision, but dialect involvement is suspected. When 'doubtful' is marked the rest of the taxonomy categories are coded as if there is no dialect involvement.

This category is generally marked only for suspected dialect involving vocabulary substitutions or structural changes. Phonemic variations are included only for specifically designated sub-studies.

### 3 & 4 GRAPHIC AND PHONEMIC PROXIMITY

A reader must anticipate the structures and meanings of the author. In so doing both the graphemes and related phonemes of the ER are available to him as cues. The physical shape and/or the sound patterns related to the ER function in determining the reader's choice of the OR.

The two categories are scored using a zero through nine scale of increasing similarity. The points on the scales are intended to have equal weight across the two categories.

Only word level substitutions are keyed.

### 3 GRAPHIC PROXIMITY

Blank This category is inappropriate. The miscue involves:

- a) An omission or an insertion of a word.

ER "Here take one," said the man.  
OR "Here one," said the man.

ER The herder patted Chip and gave an arm signal toward the flock.  
OR The herder patted Chip and gave him an arm signal toward the flock.

- b) A phrase level substitution in which the two phrases can not be broken down into sub-miscues.

ER You do not have to stay home.  
OR You may go and have fun.

Or, a phrase level substitution for a single word (or the reverse.)

ER ...is quite a businessman. ER do not  
OR ...is quite a busy man. OR don't

- c) Phrase or clause level intonation changes only. The specific word involved might change its grammatical category but not its spelling or its pronunciation.

ER ...that grew under water, snails, and...  
OR ...that grew underwater snails, and...

ER He still thought it more fun to pretend to be a great scientist, mixing the strange and the unknown.  
OR He still thought it more fun to pretend to be a great scientist, mixing the strange and the unknown →

ER It was fun to go to school. When he wasn't in school, he skated with his friends.  
OR It was fun to go to school when he wasn't in school, He skated with his friends.

- d) Reversal miscues that involve no substitution of ER items.

ER suck the venom out ER look first  
OR suck out the venom OR first look

- 0 There is no graphic similarity between the ER and the OR.

ER the ER too ER so ER huddle ER had  
OR a OR very OR but OR moving OR been

ER looking ER coyote ER urged  
OR \$intellate OR fighting OR only

- 1 The ER and the OR have a key letter or letters in common.

ER for ER under ER be ER accident ER made  
OR of OR ground OR keep OR instead OR read

ER with ER enough ER ledges  
OR this OR often OR glen

- 2 The middle portions of the ER and OR are similar.

ER zoom ER took ER touch ER explode ER bold  
OR cook OR looked OR would OR \$mploy OR glow

ER Elizabeth  
OR Isabel

- 3 The end portions of the ER and OR are similar.

ER don't ER voice ER sharply ER uncles  
OR needn't OR face OR deeply OR friends

ER taking      ER vegetate  
OR checking    OR \$invirate

4 The beginning portions of the ER and OR are similar.

ER perceive    ER may      ER have      ER out  
OR perhaps    OR might    OR hadn't    OR of

ER queer      ER experiment  
OR quick      OR \$exmutter

5 The beginning and middle portions of the ER and OR are similar.

ER walk      ER went      ER chloroform    ER vapid  
OR walked    OR wanted    OR chlorophyll    OR rapidly

ER narrowed    ER morally  
OR \$nearow      OR normal

6 The beginning and end portions of the ER and OR are similar.

ER pets      ER lamps      ER twitching      ER must  
OR puppies    OR lights      OR twinkling      OR might

ER library    ER uncle  
OR liberty    OR once

or, the middle and end portions of the ER and OR are similar.

ER cough      ER eternal    ER glanced  
OR enough      OR internal    OR danced

7 The beginning, middle and end portions of the ER and OR are similar.

ER quickly    ER calibrations    ER preconception  
OR quietly    OR celebrations    OR preoccupation

ER thought    ER exclaimed      ER chemist  
OR through    OR explained      OR \$chemisist

or, there is a reversal involving three or more letters.

ER was      ER spot      ER elbow  
OR saw      OR stop      OR below

8 There is a single grapheme difference between the ER and the OR.

ER batter      ER squirting      ER stripes      ER A  
OR butter      OR squinting      OR strips      OR I

ER sister's    ER cloudy    ER made      ER when  
OR sisters    OR \$cloudly    OR make      OR then

or, a reversal involving two letters.

ER on	ER stick	ER girl
OR no	OR ticks	OR grill

9 The ER and the OR are homographs.

ER read (present tense)	ER live (adjective)
OR read (past tense)	OR live (verb)
ER tear (noun)	ER record (noun)
OR tear (verb)	OR record (verb)

Additional Notes:

For numbers 0 through 6, one extra point is added when:

a) the ER and OR have similar configuration

ER tab	ER dig	ER plug
OR tip	OR dip	OR play

b) or, when the ER and OR are two letter words which might have no other points of graphic similarity.

ER to	ER he	ER at
OR in	OR it	OR in

When the OR is a non-word, a spelling is created for it by using the spelling of the ER as a base.

ER scabbard	ER caperings	ER vegetate
OR \$scappard	OR \$camperings	OR \$venget

Dialect miscues involving phonemic variations are treated as having standard spelling.

ER	get	ER	with	ER	this
sounds like /git/		sounds like /wif/		sounds like /dis/	
OR	get	OR	with	OR	this

4 PHONEMIC PROXIMITY

Blank This category is inappropriate. The miscue involves:

a) An omission or an insertion of a word.

ER	Soon he returned <u>with</u> two straight sticks.
OR	Soon he returned two straight sticks.

ER Her hunger made her sniff hopefully under rocky ledges and along the small trails in the sage.

OR Her hunger made her sniff hopefully under the rocky ledges and along the small trails in the sage.

- b) A phrase level substitution in which the two phrases are not broken down into submiscues.

ER You do not have to stay home.

OR You may go and have fun.

Or, a phrase level substitution for a single word.

ER businessman

ER don'

OR busy man

OR do not

- c) Phrase or clause level intonation changes only. The specific word involved might change its grammatical category but not its spelling or its pronunciation.

ER ...that grew under water, snails, and...

OR ...that grew underwater snails, and...

ER He still thought it more fun to pretend to be a great scientist, mixing the strange and the and the unknown.

OR He still thought it more fun to pretend to be a great scientist, mixing the strange and the unknown →

ER It was fun to go to school. When he wasn't in school, he skated with his friends.

OR It was fun to go to school when he wasn't in school. He skated with his friends.

- d) Reversal miscues that involve no substitution of ER items.

ER suck the venom out

ER look first

OR suck out the venom

OR first look

- 0 There is no phonemic similarity between the ER and the OR.

ER so      ER find      ER have      ER had      ER huddled  
OR but      OR allow      OR use      OR been      OR moving

ER urged      ER sage  
OR only      OR shack

- 1 The ER and the OR have a key sound or sounds in common.

ER keep      ER under      ER often  
OR pick      OR around      OR enough



2 The middle portion of the ER and OR are similar.

ER tight      ER his      ER knolls      ER explode  
OR lightly    OR with      OR stroll      OR \$mploy

ER ran  
OR had

3 The ER and OR have the end portions in common.

ER higher      ER voice      ER made      ER choked  
OR anger      OR face      OR head      OR caught

ER taking      ER had  
OR checking    OR did

4 The ER and OR have the beginning portion in common.

ER stood      ER before    ER have      ER kite  
OR still      OR because   OR hadn't    OR cap

ER lamp      ER who      ER experiment  
OR light      OR he      OR \$exmoter

5 The ER and OR have common beginning and middle portions.

ER should      ER smiling   ER needn't    ER setting  
OR shouldn't   OR smile      OR needed    OR settle

ER neighbor  
OR \$neighnew

6 The ER and OR have common beginning and end portions

ER twitching      ER poured      ER being  
OR twinkling      OR pushed      OR beginning

ER while      ER must      ER tearful    ER library  
OR well      OR much      OR \$teareeble OR liberty

or, they have common middle and end portions.

ER calibrations    ER eternal      ER mcisture  
OR celebrations    OR internal      OR posture

ER cellar      ER expressed  
OR curler      OR impressed

7 The beginning, middle and end portions of the ER and OR are similar.

ER dissidents      ER Maximilian    ER crowded  
OR descendent      OR \$Maxiy Milan   OR crowned

ER exclaimed  
OR explained

8 The ER and OR differ by a single vowel or consonant or vowel cluster

ER grow	ER A	ER stripes	ER sighed
OR grew	OR I	OR strips	OR said
ER round	ER Tom	ER when	ER cloudy
OR around	OR Tommy	OR then	OR \$cloudly

or, there is a morphophonemic difference

ER went	ER pen
OR \$wint	OR \$pin

or, there is an intonational shift (including the schwa).

ER a	ER contract (v)
OR $\bar{a}$	OR contract (n)

9 The ER and OR are homophones.

ER read	ER too	ER heir
OR red	OR two	OR air

5 ALLOLOGS

Allologs are considered to be alternate representational forms for the same item. Unlike synonyms there is no meaning change involved in the substitution of allolog forms. Both forms are generally available to the same language user; he uses them in different settings.

0 An allolog is not involved in the miscue.

a) The miscue is coded under DIALECT. (The only exception to this rule is 5.4 -- long and short form or syllable deletion/insertion.)

b) The miscue is coded under SEMANTIC WORD RELATIONSHIPS.

1 The OR is a contracted form of the ER.

ER can not	ER that is	ER you have
OR can't	OR that's	OR you've

2 The OR is a full form of the ER contraction.

ER won't	ER haven't	ER let's
OR will not	OR have not	OR let us

3 The OR is a contraction which is not represented in print.

ER He will not go.  
OR He willn't go.

4 The OR is either a long or short form of the ER. This must be an alternate available form within the dialect of the reader,

ER airplane	ER Tom	ER because	ER into
OR plane	OR Tommy	OR 'cause	OR in
ER toward	ER round	ER trouser pocket	
OR towards	OR around	OR trousers pocket	

or the OR involves a syllable deletion or insertion. This must be an alternate available form within the idiolect of the reader.

ER regardless      ER refrigerator  
OR irregardless    OR frigerator

5 The OR involves a shift to idiomatic form.

ER The sheep were spreading over the sides.  
OR The sheep were spreading all over the sides.

ER ...reading the words aloud.  
OR ...reading the words out loud.

6 The OR involves a shift from idiomatic form.

ER The boss took in the camp at a glance.  
OR The boss took the camp at a glance.

ER He is going on nine.  
OR He is going to be nine.

7 The OR involves a misarticulation. This is an inadvertent production of a form for which the reader has another acceptable form.

ER Aluminum	ER strings	ER brother
OR \$Alunimum	OR \$shtrings	OR \$brothy

ER soft-soled  
OR \$soft-sholed

In instances where the reader has an articulation difficulty and is unable to produce the acceptable form, 2.2 'idiolect' is marked.

## 6 & 7 SYNTACTIC AND SEMANTIC ACCEPTABILITY

A sentence can be viewed as involving both a syntactic organization and a semantic organization. The effects that a miscue has upon these two systems can be analysed both in terms of acceptability and of change.

The following two categories are concerned only with whether the OR produces structure and/or meaning which is acceptable within the context of the material.

A reader reacts to the correctness and the expectedness of material in terms of his own dialect. In both of the acceptability categories, the reader's dialect is the norm by which the material is judged.

### 6 SYNTACTIC ACCEPTABILITY

The grammatical structures forming the sentence must be viewed apart from any semantic meaning which they carry. The view is an abstract one involving possible grammatical function organization.

The sentence

Canaries are very vicious dogs.

involves a grammatical organization

Subject	be	intensifier	adjective	subject
pl. noun	present			complement
	tense pl.			common
				pl.

which is completely acceptable while canaries does not fit semantically with the rest of the sentence.

The test for the syntactic acceptability of any word is that an acceptable English sentence be able to be produced with that word in the specified position.

ER Did you see <sup>the</sup>my little monkey?

The grammatical function has been changed from possessive pronoun to determiner, but the resulting structure is fully acceptable.

It is possible for the miscue to produce a significant change in grammar which is still acceptable within the context. This category is meant to register only the acceptability of the OR to the rest of the material.

As a reader processes a sentence, it is possible for an initial miscue to cause the need either for a regression correction or for

additional changes in the structure in order to maintain its acceptability. Whether or not a reader chooses to make these adjustments provides a cue to his processing of grammatical structure. In determining syntactic acceptability, the entire sentence is read with all uncorrected miscues intact.

The quick eyes of the boss found <sup>ⓐ</sup>that <sup>ⓑ</sup>what Jake <sup>ⓒ</sup>was <sup>ⓓ</sup>saw,  
and <sup>ⓔ</sup>he shouted, "Don't shoot! <sup>ⓕ</sup>I <sup>ⓖ</sup>That's Peggy."

In coding that the sentence must be read:

The quick eyes of the boss found that Jacob saw, and he shouted, "Don't shoot! That's Peggy."

In coding Jacob the sentence must be read:

The quick eyes of the boss found what Jacob saw, and he shouted, "Don't shoot! That's Peggy."

In coding was the sentence must be read:

The quick eyes of the boss found what Jacob was and he shouted, "Don't shoot! That's Peggy."

In coding I the sentence must be read:

The quick eyes of the boss found what Jacob saw, and he shouted, "Don't shoot! I Peggy."

The structure which is treated as an "entire sentence" is defined by Kellogg Hunt's concept of 'minimal terminable unit'.

It had been a long day for the dogs/  
and Peggy limped heavily as she  
approached the camp. (2 minimal terminable units)

The rays of the setting sun lingered over  
the high Arizona desert, touching the rocky  
tip of Badger Mountain and tinting the bold  
face of Antelope Rim. (1 minimal terminable unit)

- 0 The miscue results in a structure which is completely syntactically unacceptable. The miscue disrupts the structure of the sentence and does not have any possible grammatical relationship with either prior or preceding portions of the sentence.

ER I couldn't help feeling proud.  
OR I couldn't feeling proud.

ER My blue airplane is not here.  
OR My blue airplane look not here.

ER Look for the red train.  
OR The for the red train.

- 1 The miscue results in a structure which is syntactically acceptable only with the prior portion of the sentence. It would be possible to complete this segment and produce an acceptable grammatical structure.

ER Billy was delighted that the roots had made such beautiful colors.

OR Billy was delighted that he/roots had made such beautiful colors.

ER I stood still beside him watching. Harry was watching too and sweating all over his face so it shone like it was smeared thick with face cream.

OR I stood still beside him watching Harry./was watching too and sweating all over his face so it shone like it was smeared thick with face cream.

ER He had the blue airplane.

OR He had blue/airplane.

ER The shallow basin of Salt Creek Wash became a gathering pool of darkness where a band of eight hundred sheep with their lambs were bedding down for the night on a small patch of meadow.

OR The shallow basin of Salt Creek Wash became a gathering pool of darkness where a band of eight hundred sheep were/with their lambs were bedding down for the night on a small patch of meadow.

- 2 The miscue results in a structure which is syntactically acceptable only with the following portion of the sentence. It would be possible to complete this segment and produce an acceptable grammatical structure.

ER He pulled the kitchen stepladder out into the hall.

OR He pulled the kitchen stepladder/walked into the hall.

ER Both of us together can open the door.

OR Both of us/Tommy can open the door.

ER "Is my little monkey here?" said the man.

OR "Is my little/the monkey here?" said the man.

- 3 The miscue results in a structure which is syntactically acceptable only within the sentence. The OR sentence is a completely acceptable structure. However, it does not fit within the structural restraints that are operating within the larger context of the material.

- ER Where did you get your pretty hat?  
OR Did you get your pretty new hat?

The plot of the story revolves around a number of people commenting on a new hat which Mrs Duck is unaware of wearing. The question must reflect the person's awareness of the hat.

- ER Every year they give a prize to the student with the most original outside project.  
OR Every year they gave a prize to the student with the most original outside project.

The plot involves the author's attempt to win the prize. The action must be continuing.

- 4 The miscue results in a structure which is syntactically acceptable within the total passage. The OR sentence is a completely acceptable structure which fits within the structural restraints operating within the larger context of the material.

- ER He wanted to see what was inside.  
OR He went to see what was inside.

- ER He was making an electric bell as a surprise for his mother.  
OR He was making an electric bell to surprise his mother.

- ER He started to go quickly across the room.  
OR He started to go quick across the room.

Additional Notes:

When a miscue is an omission, the word following (preceding) must be included in the reading for the miscue to be syntactically acceptable with prior portion of sentence (6.1),

- ER Mrs Duck looked here and there.  
OR Mrs Duck looked and/there.

- ER The expression was in the eyes and around the mouth.  
OR The expression in/the eyes and around the mouth.

or syntactically acceptable with following portion of sentence (6.2).

- ER "He did not stop here," said Sue.  
OR "He did/not here," said Sue.

- ER "If it bothers you to think of it as baby sitting," my father said,....  
OR "If it bothers/you think of it as baby sitting," my father said,....

When either the first or the last word of a sentence is involved in a miscue, the possible structural relationships to the rest of the sentence are limited to 'total acceptability', (either 6.3 or 6.4)

ER Then one day Freddie made an interesting mixture.  
OR One day Freddie made an interesting mixture.

ER From the strings she made beautiful baskets.  
OR From the strings she made beautiful blankets.

ER Where did you get your pretty hat?  
OR Did you get your pretty hat?

or to total u. acceptability (6.0).

ER A policeman stared at them.  
OR I policeman stared at them.

ER His eyes caught sight of a red jacket.  
OR He eyes caught sight of a red jacket.

ER I'll be back soon.  
OR I'll be back so.

## 7 SEMANTIC ACCEPTABILITY

The acceptability of the meaning involved in the OR sentence is the concern. Multiple miscues can occur within a sentence. The reader has the option of correcting them or of altering the material. When determining semantic acceptability, the entire sentence will be read with all uncorrected miscues intact. (An "entire sentence" will be defined as being a Minimal Terminable Unit.)

He was speaking slowly and trying to think the thing out  
while he talked.

The omission of the is unacceptable with any portion of the sentence and will be marked 7.0. Because of this first miscue the substitution of we for he will only be marked acceptable with following, 7.2.

The structural organization of a sentence forms the basis for semantic relationships. Meaning, as a language system, is dependent upon syntax. It is the order of items and the use of inflection that indicate the meaning relationships of the items. The syntactic order is separate from and can precede the meaning but the meaning can not exist without the order. Semantic acceptability can never be scored higher than syntactic acceptability.



She was a small yellow canary.

syntactic acceptability 6.4  
semantic acceptability 7.0

- 0 The miscue results in a structure which is completely semantically unacceptable. The miscue disrupts the meaning of the sentence and does not have any possible semantic relationship with either prior or following portions of the sentence.

ER One of the things he liked most was cranberry picking in the fall.

OR One of the things he liked most was \$carberrry picking in the fall.

ER Kitten Jones would not have changed her white fur coat for anything.

OR Kitten Jones would not have changed her white few coat for anything.

ER Billy liked to take part in the work of his tribe.

OR Billy liked to take part in the work of tribe.

- 1 The miscue results in a structure which is semantically acceptable only with the prior portion of the sentence. It would be possible to complete this segment and produce an acceptable grammatical structure.

ER I thought I would faint. I thought the refrigerator would explode. I knew it was Freddie's fault.

OR I thought I would faint. I thought the refrigerator would explode. I knew I/was Freddie's fault.

ER "You're just like your Uncle August - never letting well enough alone."

OR "You're just like your Uncle August - never lifting/well enough alone."

ER It helps me to remember the word definitions if I read them out loud.

OR It helps me to remember the word definitions I/read them out loud.

- 2 The miscue results in a structure which is semantically acceptable only with the following portion of the sentence. It would be possible to complete this segment and produce an acceptable grammatical structure.

ER His Uncle Maximilian was a real chemist with a company in Switzerland.

OR His Uncle Maximilian was a real/chemistry with a company in Switzerland.

ER At once Freddie set to work seriously.  
OR At/only Freddie set to work seriously.

ER Suddenly I jumped from the chair, a wonderful idea  
implanted in my brain.  
OR Sud. only I jumped from the chair, a wonderful idea/  
implant in my brain.

- 3 The miscue results in a structure which is semantically acceptable only within the sentence. The OR sentence is completely semantically acceptable. However, it does not fit within the semantic restraints that are operating within the larger context of the material.

ER Danny had to hold up the wires for him.  
OR Danny had to hold up the telephone wires for him.  
(Telephone wires are not in the story, nor do they fit in.)

ER She taught him to know the kind of roots used by  
Winnebago Indians for many years.  
OR She taught him to know the kind of roofs used by  
Winnebago Indians for many years. (They lived in  
tepees.)

- 4 The miscue results in a structure which is semantically acceptable within the total passage. The OR sentence is completely semantically acceptable and fits within the semantic restraints that are operating within the larger context of the material.

ER He wanted to see what was inside.  
OR He went to see what was inside.

ER Freddie tried, with all his strength, but he couldn't  
open the closet door.  
OR Freddie tried, with all his strength, but he couldn't  
open the closed door.

ER He started to go quickly across the room.  
OR He started to go quick across the room.

ER "I've been waiting for you," He raised his eyes and  
looked at me.  
OR "I've been waiting for you," he raised his eyes and  
looked at me.

#### Additional Notes:

As with Syntactic Acceptability, when the miscue is an omission, the word following (preceding) must be included in the reading for the miscue to be semantically acceptable with prior portion of sentence (7.1),

ER But he still thought it more fun to pretend to be a great scientist...

OR But he still thought more/fun to pretend to be a great scientist...

ER You haven't told me what the idea is yet.

OR You haven't told me the/idea is yet.

or semantically acceptable with following portion of sentence (7.2).

ER When 200 million Americans sign a Sunday New York Times ad opposed to the Vietnam War, the Pentagon will retreat.

OR When 200 million Americans sign a Sunday New York Times ad/opposed the Vietnam War, the Pentagon will retreat.

ER There two men were signaling to each other, and one was pointing to the clock.

OR There two men were signaling to each other,/and was pointing to the clock.

When either the first or the last word of a sentence is involved in a miscue, the possible semantic relationships to the rest of the sentence are limited to 'total acceptability', (either 7.3 or 7.4)

ER He will make a good pet.

OR We will make a good pet.

ER He and the fawn would race together through the forest.

OR He and the fawn would race together through the field.

or to 'total unacceptability' (7.0).

ER All of them were living in Switzerland.

OR Any of them were living in Switzerland.

ER She made her own paints from the roots that Billy gathered from the swamps.

OR She made her own paints from the roots that Billy gathered from the stamps.

## 8 TRANSFORMATION

A reader works with already generated and transformed grammatical structures. His miscues reflect his anticipation of the deep structure, surface structure and the meaning with which he is dealing. It is possible for a miscue to cause a change in either or both.

Syntactic changes which the reader institutes can occur at either the deep or surface structure level. In this sense, he recreates the generative process of the author and transforms the material.

0 A grammatical transformation is not involved. The syntactic structure of the sentence is unchanged.

a) A change involving only surface level morphophonemic rules.

ER an            ER can not  
OR a             OR can't

b) A change involving meaning only.

ER It sounded like a fire siren.  
OR It shouted like a fire siren.

ER He taped the batteries end to end.  
OR He tapped the batteries end to end.

c) Changes occurring within the noun and noun modifier category.

1. Distinctions between masculine and feminine in nouns and titles.

ER Mr.        ER boy    ER John    ER aviator  
OR Mrs.      OR girl    OR Joan    OR aviatrix

2. Substitutions of one noun type for another.

ER The surprise is in my box. (common noun)  
OR The five is in my box. (word as word name)

3. Changes occurring between noun modifier fillers.

ER ...during the television program. (noun adjunct)  
OR ...during the televised program. (verb derived noun)

ER ...the ears of the larger dog. (comparative)  
OR ...the ears of the large dog.

4. Some changes between pronouns.

ER he (she)  
OR it

When the noun referred to is an animal or object.

- d) An omission or insertion within a grammatical function.

ER "Look at me," said Yellow Bird.  
OR "Look at me," said Bird.

Both Yellow and Bird are keyed as noun phrasal unit. So that the word omission does not cause the omission of the grammatical function.

- e) Movements of adverbs or particles within a sentence.

ER Take your shoes off.  
OR Take off your shoes.

ER He ran happily.  
OR Happily he ran.

- f) Variations not involved in the sentence structure.

ER The words "corrals" and "boss" meant things to Peggy.  
OR The words "corral" and "boss" meant things to Peggy.

- 1 A transformation occurs which involves a difference in deep structure between the ER and OR. In some instances both syntax and meaning are changed, in others, the syntax changes while the meaning is retained.

- a) Differences in tense or number.

ER As they approached the tent, the thin wail of coyotes reached her ears from upstream.  
OR As they approached the tent, the thin wail of coyotes reached their ears from upstream.

ER He was the spring flowers.  
OR He saw a spring flowers

Determiner substitutions do not usually involve a transformation, but in this case, the determiner substitution causes a move from singular to plural.

- b) Omissions or insertions of a grammatical function.

ER All of them were living in Switzerland.  
OR All of them were living in about Switzerland.

ER His father usually called him Tinker.  
OR His father called him Tinker.

ER She put on a bright cotton dress.  
OR She put on a cotton dress.

ER He was straining to get the words out.  
OR He was straining to get out.

ER We have many goals for tomorrow.  
OR We have made many goals for tomorrow.

c) Changes in the relationship of phrases and/or clauses.

ER I'm going to give you an injection. Serum.  
OR I'm going to give you an injection of serum.

ER It went in smooth as into cheese.  
(as if it were going into cheese)  
OR It went in smooth as cheese.  
(as cheese is smooth)

ER Here, take one. (you take one)  
OR Here's one. (one for you)

ER typical, that's it, typical. (that as a pronoun)  
OR Typical, that is, typical. (that as a clause marker)

ER On nights when the fires were burning, she often heard coyotes singing a protest from distant ridges.  
OR On nights when the fires were burning, she often heard coyotes singing to protest from distant ridges.

ER He said to keep quite still.  
OR He said to keep quiet, still.

ER I switched off the headlamps of the car so the beam wouldn't swing in through the window of the side bedroom and wake Harry Pope.  
(The beam wouldn't swing in and the beam wouldn't wake)  
OR I switched off the headlamps of the car so the beam wouldn't swing in through the window of the side bedroom and woke Harry Pope.  
(I switched off and I woke)

2 A transformation occurs in which the deep structure of the ER and the OR remains the same while the surface structure of the OR is generated by a different set of compulsory rules. The author and the reader have a different set of obligatory transformations in their grammars.

a) Regional or social dialect variations are involved.

ER She tore bunches of fur from his back.  
OR She tore bunch of fur from his back.

ER He has gone to the store  
OR He gone to the store.

b) The author has produced a structure which is either unusual for the situation or not entirely correct.

ER Billy knew that fawns were very shy.  
OR Billy knew that fawns are very shy.

The shyness of fawns is a continuing situation and need not be past tense because of the verb knew in the sentence.

ER Knew I mustn't move. (This is not a usual surface level deletion.)  
OR I knew I mustn't move.

c) Compulsory rule shifts have become involved due to a change in terms.

ER After school one day Ted went for a walk in the park.  
OR After the show one day Ted went for a walk in the park.

3 A transformation occurs in which the deep structure of the ER and the OR remains the same while the surface structure of the OR is generated by alternate available rules. The reader has available, in his grammar, the transform rules for both ER and OR surface structures.

FR This senseless, futile debate between the obstetrician and the mortician will end.  
OR This senseless, futile debate between obstetrician and the mortician will end.

To be fully syntactically acceptable the before mortician would also need to be omitted.

ER One of them tore chunks of fur and hide from her neck while the other slashed a hind foot.  
OR One of them tore chunks of fur and hide from her neck, The other slashed a hind foot.

ER When Freddie told how he had fixed the clock Mrs. Miller said, "You're just like Uncle Charles."  
OR When Freddie told how he fixed the clock Mrs. Miller said, "You're just like Uncle Charles."

The variation in forms of the past tense does not alter the meaning.

ER He started to go quickly across the room.  
OR He started to go quick across the room.

An alternate acceptable adverbial form.

ER ...counting each step carefully in the dark so I wouldn't take an extra step which wasn't there...  
OR ...counting each step carefully in the dark so I wouldn't take an extra step which wasn't there...

Involves the same antecedent.

ER The building of coyote fires was not new to her...  
OR The building of the coyote fires was not new to her...

ER The herder patted Chip and gave an arm signal...  
OR The herder patted Chip and gave him an arm signal...

- 4 The deep structure has been lost or garbled. Sometimes the reader is completely unsuccessful in handling the grammatical structure produced by the author because it is new to him, or he fails either to recognize or anticipate it. He does not produce the structure used by the author and he fails to produce any recognizable portion of an alternate structure. (The coding of Phrase - 15 and Clause - 16 is optional when Transformation is coded 'lost or garbled'.)

a) The structure has been lost.

ER "A doctor. Of course. That's it. I'll get Ganderbai."

OR "Of course. That's its. I'll get Ganderbai."

ER "...I'm going to give you an injection. Serum. just a prick but try not to move..."

OR "...I'm going to give you an injection. Just a prick but try not to move..."



- b) The structure has been garbled. (Syntactic Acceptability has been coded 'not acceptable' - 6.0)

ER What his mother called him depended on what he had done last.

OR What his mother called him \$dipedee on what he had done last.

Neither the use of an inflectional ending or of intonation made it possible to assign a grammatical function to this non-word.

ER None of the chemicals in his set was harmful.

OR Known of the chemicals in his set was harmful.

ER They were not likely to explode.

OR They were not likely to employed.

- 9 There is some question of whether or not a transformation is involved in the miscue. Sometimes there might be a doubt as to whether the change which has occurred falls within the parameters of the transformation category. This confusion can be due either to the OR containing a very limited portion of structure or to some confusion concerning the limits of the parameters themselves.

In such situations the Transformation category should be marked 'doubtful' (8.9) and the miscue should be keyed, in the rest of the taxonomy categories, as if no transformation is involved.

## 9 & 10 SYNTACTIC AND SEMANTIC CHANGE

In two previous categories, the syntactic and semantic acceptability of the OR has been measured. The question now becomes one of evaluating how extensive a change the miscue has caused in both the structure and the meaning of the ER.

Like the Graphic Proximity and Phonemic Proximity categories, Syntactic Change and Semantic Change are scored using a zero through nine scale of increasing similarity. The points on the scales are intended to have equal weight across the two categories.

When a miscue produces a sentence which is syntactically acceptable (6.3 or 6.4), the degree of syntactic change between the ER and the OR is measured.

Because syntax can be examined with ever increasing finiteness, the following set of parameters is used for this category.

- a) In coding Syntactic Change, phrase structure is considered to consist of a surface level NP and VP so that changes involving adverbial phrases are treated as changes within the verb phrase and not as changes in phrase structure.
- b) The surface structure of a sentence is treated as being composed of independent, dependent and embedded clauses.

independent: He ran home.  
The dog bit the man when he entered the cage.

dependent: The girl screamed when the cars hit.  
After the game ended, the team celebrated.

embedded: The yellow bird... (adjective)  
's house... (possessive pronominal)  
 He wanted to buy a toy. (infinitive)

- c) Conjunctions are not treated as a part of either the phrase or clause structure when connecting two independent units.

ER He ran and he jumped. clause - no involvement  
 OR He ran. He jumped. phrase - no involvement

ER It was blue and green. phrase - substitution  
 OR It was blue-green. clause - omission

ER He ran and then he sat. clause - no involvement  
 OR He ran, then he sat. phrase - no involvement

When reading the text sentence to determine Syntactic Change all uncorrected miscues made previous to the miscue being keyed must be read intact.

## 9 SYNTACTIC CHANGE

Blank This category is inappropriate. The miscue involves either no or partial syntactic acceptability (Syntactic Acceptability '0', '1' or '2').

- 0 The syntax of the OR and the ER are unrelated. They retain no single common element of a particular phrase structure.

ER Where'd it bite you?  
 OR A bite?

- 1 The syntax of the OR and the ER have a single element in common.

2 The syntax of the OR has a key element which retains the syntactic function of the ER.

ER You do not have to stay home.  
OR You may go and have fun.

Retention of the noun phrase.

3 There is a major change in the syntax of the OR.

ER "Sue," said the man. "He did have it."  
OR Sue said. "The man, he did have it."

All of the phrases remain present but their basic relationships are altered.

ER He was lying there very still and tense as though he was holding onto himself hard because of sharp pain.  
OR He was lying there very still and tense as he thought he was holding onto himself hard because of sharp pain.

Addition of a clause.

ER "Oh, I like it here."  
OR "Go. I like it here."

Addition of a clause.

4 There is a minor change in the syntax of the OR.

ER When summer ended, the Whitemoon's packed their belongings again.  
OR The summer ended. The Whitemoon's packed their belongings again.

Move from dependent to independent clause.

ER He was speaking more slowly than ever now and so softly I had to lean close to hear him.  
OR He was speaking more slowly than ever and now so softly I had to lean close to hear him.

Change in dependency of adverb.

ER Soon he returned with two straight sticks.  
OR Soon he returned two straight sticks.

Move from prepositional phrase to direct object.

ER "Well, he's home a lot," I said.  
OR "Well, he's home a lot."

Omission of the dialogue carrier.

ER He was wearing a pair of pajamas with blue, brown and white stripes.  
OR He was wearing a pair of pajamas; blue and brown, with white stripes.

Move from adjectives embedded in prepositional phrase to subject complements.

- 5 There is a major change within the structure of the phrase. This includes the insertion, deletion or substitution within the phrase of any structure having more than one constituent

ER I want you to save half your allowance for it each week.  
OR I want you to save half your allowance each week.

Omission of a prepositional phrase.

ER He had a carriage.  
OR He had a horse-drawn carriage.  
(that was drawn by a horse)

Insertion of an embedded clause.

ER I will tell it all over Green Hills.  
OR I will tell it all on Green Hills.

With the substitution of one preposition for another (over for on), all moves from being a function word quantifier to the direct object. Yet the basic structural outlines of the sentence have not changed.

ER He is going on nine.  
OR He is going to be nine.

A verb particle is replaced by an infinitive form.

ER "Then I will find work," said Ted.  
OR "Then I will work," said Ted.

The direct object replaces the verb.

- 6 There is a minor change within the structure of the phrase. This includes the insertion, deletion or substitution of any single constituent within the phrase structure.

ER He did see the fires.  
OR He did not see the fires.

Insertion of the negative.

ER She pounded the young trees into long strings.  
OR She pounded the young trees into strings.

Omission of embedded adjective.

ER I leaned on the baby bed.  
OR I leaned on the baby's bed.

Move from adjective to possessive noun modifier.

ER ...most of them came from jungle rivers where...  
OR ...most of them came from Jungle River where...

Move from common to proper noun.

ER He raised his eyes and looked at me.  
OR He raised his eyes and looked now.

Move from prepositional phrase to adverb.

ER I could see he was awake.  
OR I could have seen he was awake.

Move from past tense to past perfect.

7 There is a change in person, tense, number or gender of the OR.

ER How he wanted to go back.  
OR How he wants to go back.

ER Billy sang for all the tribe.  
OR Billy sang for all the tribes.

ER I made a special mixture.  
OR He made a special mixture.

ER You not in bed yet?  
OR You're not in bed yet.

The move away from the question does not alter the relationship of the sentence to the rest of the text.

8 There is a change in choice of function word or another minor shift in the OR. This includes changes within sub-categories of a function word and the omission or insertion of optional surface structure. No miscues which cause either a change in dependency or modification will be coded in this sub-category.

a) Changes in choice of a function word.

ER There was a dinosaur.  
OR There was one dinosaur.

ER Young dissidents have been widely berated  
for lacking an alternative to the present system.  
OR Young dissidents have been widely berated  
for lacking an alternative in the present system.

ER ...and the generation now in power will widen  
into a new national fault line.  
OR ...and the generation now in power will widen  
to a new national fault line.

b) Omission or insertion of optional surface structure.

ER He heard the rustling of leaves.  
OR He heard the rustling of the leaves.

ER It is impossible to grow, change, mature or  
expand,....  
OR It is impossible to grow, change and mature or  
expand,....

ER I saw that my mother was smiling broadly.  
OR I saw my mother was smiling broadly.

ER Knew I mustn't move.  
OR I knew I mustn't move.

ER "Quickly Timber, but take your shoes off."  
OR "Quickly Timber, you take your shoes off."

ER I swear it.  
OR I swear.

- 9 The syntax of the OR is unchanged from the syntax of the ER. Only form class (noun, verb, adjective, adverb) substitutions will be marked here. Included are all null forms for tense or number which are dialect variations.

ER The windows were full of puppies and kittens.  
OR The windows were full of pets and kittens.

ER What queer experiment was it this time?  
OR What queen experiment was it this time?

ER What his mother called him depended on what he had done last.  
OR What his mother called him depend on what he had done last.

## 10 SEMANTIC CHANGE

When a miscue produces a sentence which is semantically acceptable (7.3 or 7.4) the degree of semantic change between the ER and the OR is measured.

In reading the text sentence to determine Semantic Change all uncorrected miscues made previous to the miscue being keyed must be read intact.

Blank This category is inappropriate. The miscue involves either no or partial semantic acceptability (Semantic Acceptability marked 0, 1 or 2).

0 The OR is completely anomolous to the rest of the story. A concept, action or relationship is introduced which is totally incongruous to the rest of the story.

ER The bulb began to glow.

OR The bulb began to grow.

The bulb is an electric light.

ER He came out of his slump and looked around.

OR He came out of his slum and looked around.

The reference was to how a T.V. producer was sitting.

ER She turned questioning eyes to the coughing herder and then to the sheep and the shadowy figure of Chip moving about the band.

OR She turned questioning eyes to the coughing herder and then to the sheep and the shadowy figure of the chimp moving about the band.

The story involves a sheep herder, two dogs, and a herd of sheep.

1 There is a change or loss affecting the plot in basic sense or creating major anomalies.

ER It was no less than an hour before dawn.

OR It was no less than an hour before dark.

The coyotes in the story become a danger to the sheep during the late hours of the night.

ER Just like your Uncle Maximilian!  
OR I like your Uncle Maximilian!

This line is repeated throughout the story as the mother compares her son to his uncles.

ER We're two days out from the corrals and a day late on the drive.  
OR We're two days out from the quarrel and a day late on the drive.

The possibility of help hinges on their expected arrival at the corrals.

2 There is a change or loss involving key aspects of the story or seriously interfering with sub-plots.

ER "Oh, I like it here."  
OR "Go. I like it here."

The character who is speaking likes her locale because of the other characters. She does not want them to leave.

ER This is the last day of Fair Week.  
OR This is the light day of Fair Week.

This was the main character's only chance to earn money and see the fair.

ER Then her eyes caught a movement in the sage near the top of the knoll.  
OR Then her eyes caught a movement in the same near the top of the knoll.

The plot hinges on the dog successfully picking up the cue of a coyote attack.

3 There is a change or loss resulting in inconsistency concerning a major incident, major character or major sequence.

ER Freddie tried with all his strength, but he couldn't open the closet door either.  
OR Freddie tried with all his strength, but he couldn't open the closet door enough.

If the door had opened at all the sister would have had light and Freddie would not have had to construct a flashlight to keep her from being frightened until help came.



- ER In one corner of the kitchen, Freddie was busy working on an experiment.  
OR In one corner of the kitchen, mother was busy working on an experiment.

Mother, and the rest of the family, object to Freddie's experimenting.

- ER "Find the toys!" said the man.  
OR "The toys!" said the man.

The hunt for the missing toys is the main action of the story.

4 There is a change or loss resulting in inconsistency concerning a minor incident, minor character or minor aspect of sequence.

- ER We have to buy feed for the horse.  
OR We have to buy rugs for the house.

The main point is that the family must spend their money on things other than tickets to the fair.

- ER Then it stopped moving and now it's lying there in the warmth.  
OR Then it stopped moving and now it's probably lying there in the warmth.

There is no doubt in the character's mind that a snake is lying there.

5 There is a change or loss of aspect which is significant but does not create inconsistencies within the story.

- ER He had been experimenting with his chemistry set.  
OR He had been experimenting with his set.

This is the first mention of the chemistry set in the story and the omission limits information on a significant aspect.

6 There is a change or loss of an unimportant detail of the story.

- ER One of the things he liked most was cranberry picking.  
OR One of the things he got most was cranberry picking.

This is just one of a number of jobs which the boy in the story does for the tribe.

- ER I want you to save half your allowance for it each week.  
OR I want to save half your allowance for it each week.

There is a change in detail concerning whether the mother or the boy will be responsible for saving the money.

- ER Next he placed the bulb so that it touched the cap on the top battery.  
OR Next he placed the bulb so that it touched the cap on the battery.

There is a change in the number of batteries the boy uses in making his flashlight.

7 There is a change in person, tense, number, comparative, etc. which is noncritical to the story.

- ER Andrew had made a very favorable impression.  
OR Andrew made a very favorable impression.

- ER "Where are you?" he shouted.  
OR "Where are you?" she shouted.

8 There is a slight change in connotation,

- ER Then he noticed that this one's leg was broken.  
OR Then he noticed that one leg was broken.

- ER Then they all crowded into the car.  
OR Then they all crawled into the car.

- ER Gandertai took a piece of red rubber tubing from his bag and slid one end under and up and around Harry's bicep.  
OR Gandertai took a piece of rubber tubing from his bag and slid one end under and up and around Harry's bicep.

or, substitution of a similar name which doesn't confuse the cast.

- ER Billy Whitemoon was a Winnebago Indian boy.  
OR Billy Whitemoon was a Wonniebago Indian boy.

- ER I went across to the door of Harry's room, opened it quietly, and looked in.  
OR I went across to the door of Henry's room, opened it quietly, and looked in.

9 No change has occurred involving story meaning.

- ER They covered it (\*) with deer hides to keep the family dry in rainy weather.  
OR They covered it with deer hide to keep the family dry in rainy weather.

(\* a summer house)

- ER He heard the rustling of leaves.  
OR He heard the rustling of the leaves.

- ER When summer ended, the Whitemoons packed their belongings again.  
OR The summer ended. The Whitemoons packed their belongings again.

- ER "I've been waiting for you," He raised his eyes and looked at me.  
OR "I've been waiting for you," he raised his eyes and looked at me.

11 INTONATION

Changes in intonation are involved in almost all miscues. This category attempts to register only those situations where the intonation change is part of the direct cause of the miscue and not only a result of other changes.

- 0 Intonation is not involved in the miscue. Within these miscues the intonation shifts which occur result from other changes which the reader has made.

- ER "You are too little," said Father.  
OR "You is too little," said Father.

- ER Here is something you can do.  
OR Here is something to get down.

- ER Come, Peggy.  
OR Come on, Peggy.

- 1 An intonation shift within a word is involved. The shift in intonation creates either a non-word or a different lexical item.

- ER "Philosophical!" I yelled.  
OR "Philoso=phical!" I yelled.

- ER ...lingered over the high Arizona desert,...  
OR ...lingered over the high Arizona de=sert,...

ER ..., the tendon above one hind leg was severed,...  
OR ..., the tendon above one hind leg was se-vered,...

- 2 An intonation shift is involved between words within one phrase structure of the sentence. The shift does not cause changes which cross phrase structure boundaries.

ER ...came from jungle rivers where...  
OR ...came from Jungle River where...

Jungle moves from an adjective position to a part of a proper name (noun phrase).

ER ...that grew under water, snails, and...  
OR ...that grew underwater snails, and...

Snails moves from being the first in a list of items that grow under water to being a specifically modified kind of snail.

- 3 Intonation is involved which is relative to the phrase or clause structure of the sentence. The intonation shift causes changes which cross phrase and/or clause boundaries.

ER Tomorrow we must crown a Miss America who has buck teeth, cash in Las Vegas, abandon our calling cards and list everyone in Who's Who.  
OR Tomorrow we must crown a Miss America who has buck teeth, cash in Las Vegas, abandon our calling cards and list everyone in Who's Who.

In the ER sentence cash in is a verb plus particle meaning "to turn in." The reader anticipated a noun meaning "money" plus a prepositional phrase.

ER ...a last look assured her that all was well and that her mate was patrolling the far side.  
OR ...a last look assured her that all was well , that her mate was patrolling the far side.  
ER The dogs uneasiness, growing for the past few days, now became more acute.  
OR The dogs ungreasy growl for the past few days, now became more acute.

- 4 A shift in terminal sentence intonation is involved.

ER It was fun to go to school. When he wasn't in school, he skated with his friends.  
OR It was fun to go to school when he wasn't in school. He skated with his friends.

ER And bring serum for a krait bite.  
OR And bring serum for a krait bite?

ER Her muscles tensed. As she started forward, Chip wheeled to face the knoll.  
OR Her muscles tensed as she started forward, Chip wheeled to face the knoll.

5 The intonation change involves a substitution of a conjunction for terminal punctuation or the reverse.

ER The boys fished and then they cooked their catch.  
OR The boys fished. Then they cooked their catch.

ER She pounded the young trees into long strings. From the strings she made beautiful baskets.  
OR She pounded the young trees into long strings and from the strings she made beautiful baskets.

6 The intonation change involves direct quotes.

ER "Tom," said mother.  
OR Tom said, "Mother."

ER Mr. Miller sighed. "Seriously, Tinker, sometimes I wish you didn't want to be a scientist."  
OR Mr. Miller sighed seriously. "Tinker sometimes I wish you didn't want to be a scientist."

12 THROUGH 16 LEVELS

Previous categories have registered the occurrence of any syntactic change. The following set of categories records these changes for both surface and deep structure in relation to the varying structural constituents.

Language constituents are interrelated so that a change within one can also mean a change in another. Where possible, these compulsory relationships are indicated.

In many ways, change at one structural level causes changes at all of the succeeding levels. For this reason, the categories in this section become increasingly selective of the phenomena which they record as they incorporate subsequent categories.

The kind and level of miscue can restrict the possible involvement of structural constituents. When a category is either not involved or restricted from involvement zero will be marked.

## 12 SUBMORPHEMIC

Sound differences between the ER and the OR are recorded. These differences are limited to one and two phoneme sequences and bound morphemes which are composed of a schwa plus a consonant.

### 0 The submorphemic level is not involved.

- a) There is a difference of a two phoneme sequence which is either co-terminus with the morpheme or within a three to four phoneme sequence.

ER an	ER of	ER had	ER the
OR ā	OR it	OR made	OR this

ER bigger  
OR better

- b) The miscue is a word level substitution with a difference greater than a two phoneme sequence.

ER explode	ER Maximilian	ER cranberry
OR employed	OR \$Maxmil	OR \$canderberry

- c) The miscue involves a whole word omission/insertion, or a phrase level miscue.

ER It's very dark in here.  
OR It's very dark here.

ER I can't get out.  
OR I can't get it out.

ER He put it aside.  
OR He put it to the side.

- 1 There is a substitution of phonemes. This can include a substitution between a one and two phoneme sequence.

ER bit	ER then	ER none	ER hunger	ER rocky
OR bat	OR when	OR known	OR hungry	OR rocks

ER weakened  
OR widened

A one phoneme sequence can be co-terminus with the morpheme.

ER I  
OR A

2 There is an insertion of a phoneme(s).

ER tanks    ER Tom    ER your    ER a    ER high  
OR \$tranks   OR Tommy   OR yours   OR the   OR higher

3 There is an omission of a phoneme(s).

ER tracks    ER quickly    ER feasted    ER midst  
OR tacks    OR quick    OR feast    OR mist

ER noses  
OR nose

4 There is a reversal of phonemes.

ER pilot    ER Spot    ER girl    ER split  
OR polite   OR stop    OR grill   OR slipped

5 There are multiple minor phonemic variations. This involves the occurrence of more than one substitution, insertion, or omission of a one or two phoneme sequence within a longer morpheme.

ER dinosaur            ER Winnebago            ER experimenting  
OR \$dine+oh+staur    OR \$Wonniebag           OR \$espairamenteeng

13 BOUND & COMBINED MORPHEME

Miscues involving bound or combined morphemes are marked first for the physical qualities of the miscue -- substitution, insertion, omission, reversal -- and then for the kind of morphemic involvement. The examples are presented from the perspective of the morphemic involvement.

Included here are all miscues involving inflectional, derivational or contractional morphemes.

Irregularly formed bound morphemes which involve spelling changes internal to the root word (come/came, woman/women, ox/oxen) are included within the category.

Also included are variant base forms which cause the use of bound morpheme allomorphs (breakfas            breakfases). (See Word and Free morpheme categories also.)

00 This category is not involved:

- a) There is a word level substitution which does not involve bound or combined morphemes.

ER when    ER cranberry    ER and    ER backward  
OR then    OR \$canJerry    OR had    OR backwards

ER toward ER tucked  
OR towards O. tuck

- b) The miscue involves an irregularly formed bound morpheme which does not involve internal spelling changes.

ER sheep ER read  
OR sheep OR read

- c) The miscue involves either the omission or insertion of a whole word or phrase.

ER Billy smiled shyly. Then he began to sing.  
OR Billy smiled. Then he began to sing.

ER All of them were living in Switzerland.  
OR All of them were living in about Switzerland.

- d) There is a change in phrase or sentence level intonation.

ER It was fun to go to school. When he wasn't  
in school, he skated with his friends.  
OR It was fun to go to school when he wasn't in  
school. He skated with his friends.

1 The miscue involves an inflectional suffix.

11 substitution

ER help ER frightened ER girl ER horse  
OR helped OR frightening OR girls OR houses

ER Freddie's ER walked  
OR Teddie (dialect) OR wanting

All miscues involving tense and number changes through inflectional endings will be treated as substitutions.

Dialect related miscues involving a null form of the possessive will be treated as substitutions.

21 insertion

ER Freddie ER small ER high ER hurt  
OR Freddie's OR smallest OR higher OR hunting

31 omission

ER quickly ER growing ER cooking  
OR quick OR growl OR cook



41 reversal

ER coyote's walk  
OR coyote walks

2 The miscue involves a non-inflected form. This is restricted to situations in which both the ER and OR are words which indicate inflection through internal spelling changes.

12 substitution

ER woman ER men ER come  
OR women OR woman OR came

This sub-category will never involve insertions, omissions, or reversals.

3 The miscue involves a contractional suffix.

13 substitution

ER you've ER I'm  
OR it's OR I'll

23 insertion

ER you ER could ER I  
OR you've OR couldn't OR I'll

33 omission

ER couldn't ER he's  
OR could OR he

43 reversal

ER needn't have  
OR needed hadn't

4 The miscue involves a derivational suffix.

14 substitution

ER hopefully  
OR hopelessly

24 insertion

ER Tom ER hunger ER reassure  
OR Tommy (diminutive) OR hungry OR reassurance

34 omission

ER sunny beach      ER meaningless  
OR sun beach      OR meaning

ER herder  
OR herd

44 reversal

5 The miscue involves a prefix.

15 substitution

ER external      ER preconception      ER impartial  
OR internal      OR \$reconception      OR \$unpartial

25 insertion

ER usual      ER regardless      ER urgently  
OR unusual      OR irregardless      OR ungently

35 omission

ER predetermined      ER descendant  
OR determined      OR \$cendant

45 reversal

ER predetermined requisition  
OR determined \$prerequisite

6 The miscue crosses affix types.

16 substitution

ER televised program      ER useless      ER needn't  
OR television program      OR unless      OR needed

46 reversal

ER small worker  
OR smaller work

This sub-category will never involve omissions or insertions.

7 The miscue involves the base. There is some confusion over what constitutes the root word.

17 substitution

ER sheep (pl.)      ER women      ER drowned  
OR sheeps      OR womens      OR \$drownded

This sub-category will never include insertions, omissions, or reversals.

Additional Notes:

In some instances a single miscue involves two or more changes which fall within the Bound and Combined Morpheme category. In such instances sub-miscues are used (See ) and all of the changes noted.

ER institutionalizing<sup>34 34 34 31</sup> OR institute  
ER tight<sup>24 21</sup> OR tightened

14 WORD AND FREE MORPHEME

Free morphemes are oral meaning bearing units within the language which can function independently or in combination with other free or bound morphemes. Words are graphic representations of free morphemes, and free and bound morpheme combinations.

Miscues involving words and/or free morphemes are marked first for the physical qualities of the miscue -- substitution, insertion, omission, reversal -- and then for the kind of morphemic involvement. The examples are presented from the perspective of the morphemic involvement.

00 This category is not involved.

- a) The miscue involves either a misarticulation,

ER sickly whisper OR \$slicky whisper  
ER soft-soled shoes OR \$soft-sholed shoes

or, a morphophonemic variant of a word.

ER little OR \$lit+tle  
ER just OR \$jus  
ER reassuring OR \$resuring

- b) The word involved in the miscue is not physically changed but its grammatical function and/or meaning is altered.

ER He went in the house. (preposition)  
OR He went in. (pro-adverb)

ER He was a criminal lawyer. (noun adjunct)  
OR He was a criminal. (noun)

c) The miscue is at the phrase level.

ER You do not have to stay home.

OR You may go and have fun.

ER He is going on nine.

OR He is going to be nine.

ER I haven't.

OR I have not.

1 The ER and/or the OR involve a multiple morpheme word.

11 substitution

ER He looked at the doll.

OR He looks at the doll.

ER She thumped the camera...

OR She climbs the camera...

ER It was useless.

OR It was unless.

ER They packed their belongings.

OR They packed their belonging.

ER Mr Jones finished the pictures...

OR Mr Jones fishing the pictures...

21 insertion

ER All of them were living in Switzerland.

OR All of them were living in about Switzerland.

ER I suspect that the gap between...

OR I suspect that the generation gap between...

ER We'll just have to build fires again.

OR We'll just have to build bigger fires again.

31 omission

ER He heard a little moaning cry.

OR He heard a little cry.

ER The chicken pecked rapidly.

OR The chicken pecked.

ER The helpless animal at her feet...

OR The animal at her feet...

40 reversal

Any reordering of already existing elements within the text will be treated as a word reversal. Word level reversals are not marked according to the number or kind of morphemes contained within the two words involved in the miscue.

ER I can do it.  
OR Can I do it?

ER A first look.  
OR A look first.

ER He was taking the shoes off.  
OR He was taking off the shoes.

2 The ER and/or the OR involve a single morpheme word.

12 substitution

ER The train was...  
OR The toy was...

ER The women came. (irregularly formed plural)  
OR The woman came.

ER He came. (irregularly formed past tense)  
OR He went.

ER ...to accept a future they want and...  
OR ...to accept the future they want and...

22 insertion

ER He heard the rustling of leaves.  
OR He heard the rustling of the leaves.

ER The boy ran.  
OR The young boy ran.

ER ...we have many goals for tomorrow.  
OR ...we have made many goals for tomorrow.

32 omission

ER The owner of the store explained that the fish...  
OR The owner of the store explained the fish...

ER He returned with two sticks.  
OR He returned two sticks.

- ER ...wandered away from its mother, and she  
raced to it...  
OR ...wandered away from its mother, she raced  
to it...

3 The ER is a single morpheme word and the OR is a multiple morpheme word.

13 substitution

- ER How do I know he is your deer?  
OR How do I know he is yours, dear?
- ER He sang for all the tribe.  
OR He sang for all the tribes.
- ER Yet by accident he might discover something.  
OR Yet by accidentally he might discover something.
- ER ...that maturity will force the young to stop  
fighting...  
OR ...that maturity will enforce the young to  
stop fighting...

This sub-category will never involve insertions, omissions or reversals.

4 The ER is a multiple morpheme word and the OR is a single morpheme word.

14 substitution

- ER One of the things he liked most was cranberry  
picking.  
OR One of the things he got most was cranberry  
picking.
- ER This one's leg was brcken.  
OR This one leg was broken.

This sub-category will never involve insertions, omissions, or reversals.

5 The miscue involves a free morpheme within a longer word.

15 substitution

- ER They crowded into the car.  
OR They crawled into the car.
- ER He looked.  
OR He jumped.

ER ...and tinting the bold face of Antelope Rim.  
OR ...and tilting the bold face of Antelope Rim.

ER His hold weakened.  
OR His hold widened.

25 insertion

ER He was being quiet.  
OR He was becoming quiet.

35 omission

ER He was becoming quiet.  
OR He was being quiet.

6 The miscue involves one or both of the free morphemes in a compound or hyphenated word.

16 substitution

ER He must smash his shock-proof gold watch,...  
OR He must smash his stock-proof gold watch,...

ER ...when our sputnik-obsessed teachers began clobbering us with homework...  
OR ...when our \$sputnik-observed teachers began clobbering us with homework...

ER ...to the saddlebag home of her five puppies,...  
OR ...to the sandbag home of her five puppies,...

ER His mother was making a headband.  
OR His mother was making a handbag.

26 insertion

ER ...on a small patch of meadow.  
OR ...on a small patch of meadowland.

ER She scampered up the hill.  
OR She scampered up the hillside.

36 omission

ER ...gave her attention to her left forepaw...  
OR ...gave her attention to her left paw...

ER ...spilled the contents of a saddlebag onto the ground.  
OR ...spilled the contents of a saddlebag to the ground.

ER The airplane landed safely.  
 OR The plane landed safely.

46 reversal

ER The anchor was in the boathouse.  
 OR The anchor was in the houseboat.

7 The OR is a non-word.

ER Inside there was usually a parrot or a monkey.  
 OR Inside there was usually a \$partrout or a monkey.

ER ...the rocky tip of Badger Mountain...  
 OR ...the rocky tip of \$Bagger Mountain...

ER ...and send them to the contest.  
 OR ...and send them to the \$consate.

This sub-category will never involve insertions, omissions or reversals.

8 The OR is a phonemic or morphophonemic dialect alternate of the ER.

ER She suddenly wanted a drink...  
 OR She suddenly want (past tense) a drink...

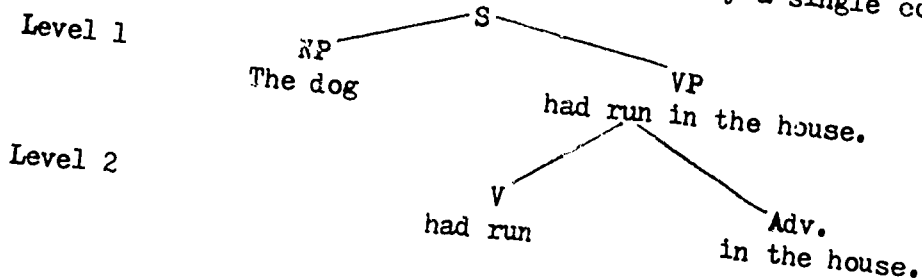
ER The water spilled all over the floor.  
 OR The water \$spilleded all over the floor.

ER ...laying the book on the bed.  
 OR ...lying the book on the bed.

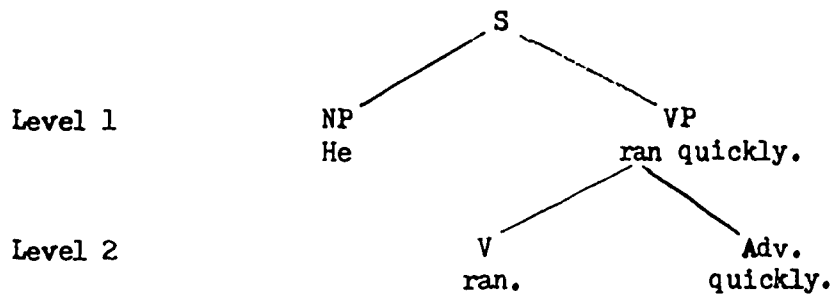
This sub-category will never involve insertions, omissions, or reversals.

15 PHRASE

Within this category, the surface structure of a sentence is treated as being composed of possible noun and verb phrases with the verb phrase consisting of possible verb and adverb phrases. Recognizable structural changes within any of these three phrases are recorded. Any of the three phrases can be represented by a single constituent.







0 This category is not involved.

- a) An OR word for which a grammatical function can not be assigned.

"You see," I said, "it helps..."

To could be either a verb marker or a preposition.

- b) A phonemic or word level substitution dialect miscue is involved in which there is no change of grammatical function.

ER He went.  
OR He goed.

ER Penny and Sue Jones liked to wear pretty colored dresses.

OR Penny and Sue Jones like (past tense) to wear pretty colored dresses.

- c) A surface phrase represented by a single word in which the OR does not change the grammatical function regardless of the grammatical filler.

ER Coyotes run away.  
OR Wolves run away.

ER She said.  
OR Susan said.

ER He ran home.  
OR He ran rapidly.

ER He went in.  
OR He went home.

ER Give me two pencils.  
OR Give me two reds.

- d) Shifts in number (singular $\leftrightarrow$ plural) or tense (present $\leftrightarrow$ past, etc.) which don't cause other structural changes in the phrase or within categories where no transformation has been marked (adj  $\rightarrow$  noun adjunct, adjunct  $\rightarrow$  verb derived adj).

ER I leaned on the baby bed.  
OR I leaned on the baby beds.

ER They impress my mind better that way.  
OR They impressed my mind better that way.

ER He was a criminal lawyer.  
OR He was a busy lawyer.

- 1 A substitution is involved at the phrase level. This can involve a change in phrase structure or the substitution of one phrase structure for another.

ER The yellow dog...  
OR the dog...

ER ...started toward the rimrock.  
OR ...started to work the rimrock.

ER ...is quite a businessman.  
OR ...is quite a busy man.

ER I haven't...  
OR I have not...

ER I was not...  
OR I wasn't...

ER The sight of his pet frightened Billy, for Lightfoot was off Winnebago land.  
OR The sight of his pet frightening Billy, for Lightfoot was off Winnebago land.

The noun phrase changes from The sight of his pet to The sight of his pet frightening Billy.

- 2 An insertion is involved at the phrase level. This must be the introduction of a phrase structure which was not present in the ER.

ER She was little more than...  
OR She was little, more than...

ER Knew I mustn't move.  
OR I knew I mustn't move.

ER "Quickly Timber, but take your shoes off."  
OR "Quickly Timber, you take your shoes off."

- 3 An omission is involved at the phrase level. This must be the loss of a phrase structure which was in the ER.

ER ...that grew under water, snails, and...  
OR ...that grew underwater snails, and...

ER But first he wanted to buy a present for his mother.  
OR But he wanted to buy a present for his mother.

first is a proadverb for the deep structure phrase in the first instance.

- 4 A reversal is involved at the phrase level. This must involve the movement from one clause to another of either a phrase or an element from a phrase.

ER He was speaking more slowly than ever now and so softly I had to lean close to hear him.  
OR He was speaking more slowly than ever and now so softly I had to lean close to hear him.

ER Mr Miller sighed. "Seriously, Tinker, sometimes I wish you didn't want to be a scientist."  
OR Mr Miller sighed curiously. "Sometimes I wish you didn't want to be a scientist."

## 16 CLAUSE

The surface structure of a sentence can be composed of varying combinations of independent, dependent and embedded clauses. At the deep structure level, a clause is considered to be composed of a noun phrase and a verb phrase. At the surface level, a clause might retain both its noun and verb phrases or might be represented by any one or several of its constituents.

the yellow dog (surface structure)

Adjectives embedded within noun phrases represent deep structure clauses.

The dog. The dog is yellow (deep structure)

The boy walking down the street is my brother. (surface structure).

The boy is walking down the street. The boy is my brother. (deep structure).

0 The clause level is not involved in the miscue.

- a) The miscue involves phonemic, bound morpheme, free morpheme, word, or phrase level changes which do not cause changes in clausal relationships.

ER It was fully dark when the alert ears of the larger dog caught the sound of a sharp whistle.

OR It was fully dark when the alert ears of the large dog caught the sound of a sharp whistle.

ER I was only washing the doll to make it look like new.

OR I was only washing the doll and make it look like new.

ER We could have a contest and pick a baby out of all the babies in town.

OR We could have a contest and pick a baby out of all babies in town.

- b) The miscue involves an OR word for which a grammatical function can not be found.

ER ...I said, "It helps me to remember the...

OR ...I said, "to helps me to remember the...

to could be either a verb marker or a preposition.

- c) If, either the ER or the OR does not progress as far as the verb we do not mark the clause level.

ⓐ Then  
Take it as is.

I could feel it <sup>ⓐ</sup>through my pajamas, moving on my stomach.

- 1 A substitution is involved at the clause level. This involves surface level variations for the same deep structure, the substitution of one deep structure for another, as well as moves between active and passive, declarative and question, positive and negative.

ER The book which you gave me was exciting.

OR The book you gave me was exciting.

ER Where did it bite you?

OR A bite?

ER This baby isn't typical.

OR This baby isn't typical?

ER I approached the gates... (active)  
OR I was approached... (passive)

- 2 An insertion is involved at the clause level. This can be a surface level word insertion which represents a deep level clause, or the insertion of a surface level clause.

ER The flowers were for the party.  
OR The yellow flowers were for the party.

ER ...quite a businessman.  
OR ...quite a busy man.

ER I would like to win one of those.  
OR I would like to win one if those.

ER Mr Vine was excited when he saw the picture of the crow.  
OR Mr Vine's was excited when he saw the picture of the crow.

- 3 An omission is involved at the clause level. This can be a surface level word omission which represents a deep level clause or, the omission of a surface level clause.

ER As a matter of fact it wasn't a surprising thing for a krait to do.  
OR As a matter of fact it wasn't surprising a thing for a krait to do.

The way to attach the final clause to the sentence is lost.

ER Such wishful thinking arises from the preconception that maturity will force the young to stop fighting for a future they want and begin to accept a future they can get.  
OR Such wishful thinking arises from the preconception that maturity will force the young to stop fighting for a future a they want and begin to accept a future they can get.

The way to attach the final clauses to the sentence is lost.

ER They took pictures of their mother wearing her party clothes.  
OR They took pictures of mother wearing her party clothes.

ER The frantic bleating became less frequent.  
OR The bleating became less frequent.

4 A reversal is involved at the clause level. It is a re-sequencing or reorganizing of existing elements without a change in clause dependency.

5 Clause dependency is altered within the sentence. Only one ER sentence should be involved in the miscue.

ER When I arrived he was there.  
OR I arrived when he was there.

ER He was wearing a pair of pajamas with blue, brown and white stripes.  
OR He was wearing a pair of pajamas, blue and brown with white stripes.

blue and brown represent embedded clauses which move in dependency from stripes to pajamas.

ER I was only washing the doll to make it look like new.  
OR I was only washing the doll and make it look like new.

The deep structure for the ER and OR remain the same -- I was washing the doll, I will make it look like new. -- the dependency changes.

ER "Our Kitten!" the Jones children said.  
OR "Our Kitten Jones!" children said.

6 Clause dependency is altered across sentences. Two ER sentences should be involved in the miscue.

ER "Ganderbai's coming. He said for you to lie still."  
OR "Ganderbai's coming," he said. for you to lie still.

ER But his hands were steady and I noticed that his eyes were watching.  
OR But his hands were steady. I noticed that his eyes were watching.

ER As he was eating, Freddie decided to fix the clock.  
OR He was eating. Freddie decided to fix the clock.

ER I found her with the camera. I thought she was just playing.  
OR I found her with the camera and thought she was just playing.

## 17 GRAMMATICAL CATEGORY AND SURFACE STRUCTURE OF OR

Researchers face a problem in dealing with the grammatical structure of language passages. Traditional, Latin based grammars are incomplete and inappropriate for describing English because they incorporate many misconceptions. Grammatical systems based on descriptive linguistics are better, but they fail to explore fully all aspects of grammar and are inadequate for dealing with language process. Generative transformational models are better suited to process, but do not fully explain surface structures, their relationships to deep structures, and the rules used for generating them.

For our research on reading miscues -- unexpected oral responses to printed texts -- a system is required that can be used to assign a grammatical function to each and every text word of a piece of prose. In our studies we are comparing the writer's surface structure with one regenerated by the reader.

Such a need immediately forces us to deal with phenomena beyond those which linguists have yet explored. At times it is necessary to make arbitrary distinctions in 'grey areas' so that we can achieve consistency even though our system 'leaks'.

There are two reasons for lack of information about some aspects of English grammar:

- a) Modern insights have not been applied yet to many phenomena.
- b) Linguists have done little recent work that goes beyond sentences to connected discourse.

Our grammatical system has been organized by augmenting a descriptive grammar developed by Fries with the use of transformational analysis.

The system ... five general categories -- noun, verb, noun modifier, verb modifier, and function word. Two additional categories are used for words of indeterminate grammatical function and for contractions. Nouns, verbs, adjectives, and adverbs are additionally marked for filler and function aspects.

The canary lived in space.

category - noun  
filler - common noun  
function - noun in prepositional phrase

Function words are marked by type (noun marker, verb marker, verb particle, etc.). And, contractions are marked according to the functions of their left and right components. As we have not yet

found a consistent way of handling numerals and initials they are treated as place holders and coded zero. (See Additional Notes page ).

F.B.I. S.S.T. H.E.W.  
He lives at 942 Main Street  
Mary read Part B.

Blank This category is not appropriate. This miscue involves:

a) A phrase level miscue which cannot be broken into word level sub-miscues.

b) Any one of the following allologs:

contraction/full  
full/contraction  
contraction not represented in print  
long and short forms, or syllable deletion/insertion  
misarticulation

c) A phonemic level dialect miscue.

d) An inflectional dialect miscue which involves an alternate surface form for the ER grammatical structure.

ER He walk (ed) home.

Walk is being keyed as dialect involved past tense form and so category 17 will be blank.

1\_ Noun Category. Nouns are words that have concrete or abstract referents. They are things or ideas, entities which function as subjects, objects, or in related ways.

#### Noun Filler

10\_ indeterminate

11\_ common noun. It is simplest to say that all nouns that aren't otherwise designated are common.

<sup>115</sup>  
"Excuse me, sir." I said.

12\_ proper noun. Included are all names of specific people or places.

John Chicago Cherokee Mary England

Each of the words in two-word names are coded separately as proper nouns.

<sup>12-</sup> <sup>12-</sup> <sup>12-</sup> <sup>12-</sup> <sup>12-</sup> <sup>12-</sup> <sup>12-</sup> <sup>12-</sup>  
John Smith Detroit River Kansas City Boston University



Where phrases have been turned into names or when the name has a direct semantic descriptive tied to the person or place 'noun phrasal' unit is marked. (See 15\_).

- 13\_ pronoun. Included are any nominative, reflexive, or objective forms which take the place of a noun or phrase or clause acting as a noun in subsequent text occurrences.

everything, he, I, she, they, you, him, it, me, them  
I want a red one.  
This is mine.  
We beat ourselves.  
I want some.

- 14\_ verb derived noun. These are nouns that are derived directly from a verb in a deep structure clause. At the surface level the word looks like a gerund or other verbal.

<sup>141</sup>  
The fighting was severe.  
(Someone was fighting. That was severe.)

<sup>141</sup>  
Jogging can be invigorating.  
(Someone is jogging. That can be invigorating.)

When more than the verb has been retained from the deep structure clause then the word is coded as a verb.

<sup>221</sup>  
Fighting the Viet-Cong is difficult.  
(Someone is fighting the Viet-Cong. That is difficult.)

- 15\_ phrasal unit noun. Phrases can be turned into names. The original grammatical relationships of the words in the phrase are lost and the phrase operates as a unitary element in the deep structure. Two types of phrasal unit are possible: a hyphenated word sequence which is inflected at the end like a noun

<sup>15-</sup>                      <sup>15-</sup>  
brother-in-law      dog-catcher

or, a phrase which has become a proper name.

<sup>15-</sup> <sup>15-</sup> <sup>15-</sup>      <sup>15-</sup> <sup>15-</sup>      <sup>15-</sup> <sup>15-</sup> <sup>15-</sup>      <sup>15-</sup> <sup>15-</sup> <sup>15-</sup>  
New York City      Candy Man      Air Force One      Old Mill Road  
<sup>15-</sup>      <sup>15-</sup>      <sup>15-</sup>  
Michigan State University

- 16\_ word as word name. Any word may be used as a noun when it is the name of the word.

<sup>164</sup>                      <sup>164</sup>  
The words "corral" and "boss" meant something to the dog.  
<sup>162</sup>  
He spelled "philosophical" correctly.

These word names must not be confused with words out of context.  
(See 62\_)

- 17\_ quantifier or ordinal as noun. Quantifiers and ordinals may appear in noun positions when the noun they introduce has been deleted from the surface structure

<sup>176</sup> At last (the last time).      <sup>176</sup> At first (the first time).

<sup>172</sup> I want the third (thing).

<sup>171</sup> Another (ship) was due any day.

<sup>171</sup> Few (people) were available.

<sup>171</sup> Three (something) of them came home.

- 18\_ noun modifier as noun. Noun modifiers may sometimes be the remnants of deep structure noun phrases.

<sup>186</sup> He flew off into the blue (sky).

<sup>182</sup> You took mine. (my something)

<sup>182</sup> She has a new convertible. (car)

<sup>181</sup> He knew that his (something) was a serious case.

<sup>185</sup> "Excuse me, mister (someone)." I said.

### Noun Function

#### 1\_0 indeterminate

- 1\_1 subject. Sentence subjects exist at two different levels: deep structure and surface structure levels. At either level, the relationship of the subject to the rest of the sentence is that of head noun in the noun phrase immediately dominated by S. The surface level manifestation of the subject may or may not be the same, then, as the deep structure subject. For instance:

- a) imperative transformations result in deleted subject,  
YOU,

Get out! (You get out)

- b) passive transformations result in an objectified subject,

Tom was hit by the ball. (The ball hit Tom)

- c) embedding transformations can result in a deleted subject or a subject that is replaced by a clause marker.

The boys, having chosen up sides, decided to play baseball. (The boys chose sides. The boys decided to play baseball)

For our purposes, nouns are coded as surface level subjects when they are the head nouns of noun phrases immediately dominated by S. (Jacobson & Rosenbaum, English Transformational Grammar). Each sentence needs at least one subject but may have as many as there are deep structure verbs. Some clauses may not have surface subjects.

<sup>151</sup>      <sup>151</sup>  
The Detroit River is not wide.

<sup>151</sup>      <sup>151</sup>  
Kitten Jones was her pet.

<sup>131</sup>                      <sup>131</sup>  
He knew that she would win.

Nouns may retain a subject function even though the verb is deleted from the surface structure.

<sup>111</sup>    <sup>111</sup>  
The moon is bigger than the biggest mountain. (is big)

<sup>111</sup>    <sup>111</sup>  
After the show (was over) the boys walked to Fifth Street.

There and it can occur as function words (rather than as verb modifier and pronoun, respectively). When these words occur as function words at the beginning of a NP, the deep structure subject of the sentence is coded as the subject.

<sup>5(11)0</sup>    <sup>111</sup>  
There is going to be a big show.

A big show is the subject in the deep structure and determines agreement of subject and verb at the surface level. Show, then, is coded as the subject of the sentence.

But in:

<sup>5(11)0</sup>    <sup>241</sup>  
It is going to rain.

To rain, an infinitive verb form, is the deep structure subject, though not coded as subject. It is coded as a function word. It is not a pronoun since it represents no antecedent noun phrase.

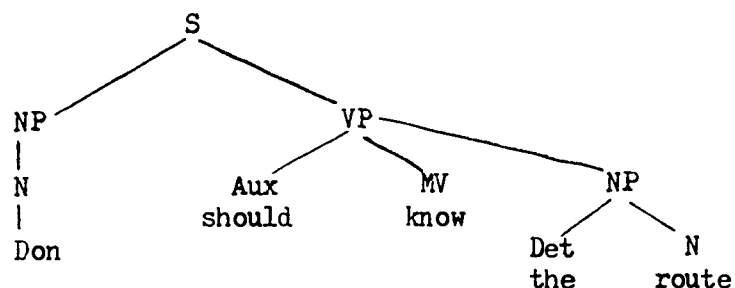
Since the subject is a particular relational position in the sentence, phrase and clause units can serve the subject function. These units are not coded as subject phrases. The words within them are coded according to their function within the embedded phrase or clause.

<sup>221</sup>                      <sup>112</sup>  
Playing tennis is strenuous.

<sup>550</sup> <sup>131</sup>      <sup>221</sup>  
What he wanted was a drink.

<sup>530</sup> <sup>241</sup>  
To win was his ambition.

1\_2 direct object. The direct object's relationship to the rest of the sentence can be described as that of the NP (excluding propositional phrase) immediately dominated by the main verb in the verb phrase.

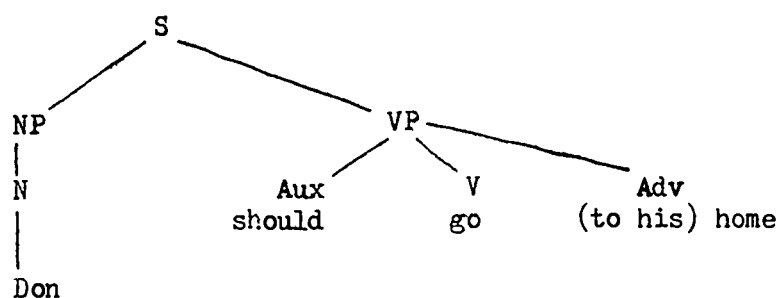


The direct object can be made the subject of a passive form of the sentence: The route should be known by Don, but can not have a preposition or phrase marker as an optional surface structure marker. Don should know to the route.

In some surface structures the direct object can occur between the verb and the verb particle.

Don <sup>221</sup>put <sup>112</sup>the fire <sup>530</sup>out.

An adverbial element is also part of the verb phrase but holds a different relationship to the rest of the sentence structure. It can not be made the subject of a passive sentence.



Cross References: transitive verbs; verb particles; indirect object; intransitive verb.

1\_3 indirect object. This function is the head noun in a noun phrase immediately dominated by the verb phrase. It is distinguished from the direct object by the feature +preposition. The preposition (usually to or for) is absent from the surface structure when the noun is coded as 1\_3:



In children's speech, the appositive sometimes changes position:

<sup>121</sup> <sup>134</sup>  
Jim, he ran away. (he=Jim)

Rather than:

<sup>131</sup> <sup>124</sup>  
He, Jim, ran away.

<sup>114</sup> <sup>131</sup>  
The men over there, they are coaches.

<sup>114</sup> <sup>131</sup>  
Us boys, we are going.

Cross reference: address, object complement, subject complement.

Owen Thomas in Transformational Grammar and the Teacher of English calls an appositive a noun modifier position (p. 95). We call it an equivalent form.

- 1\_5 address. The noun in this function serves as an attention getter, director or organizer. It can occur in various positions in a sentence, and in fact is not part of the basic structure. It appears to be an optional element in dialogue.

<sup>115</sup>  
John, where is the hammer?

<sup>125</sup>  
"Come, Peggy. Let's go."

<sup>125</sup>  
"Here, Peggy, old girl," he said.

<sup>125</sup> <sup>125</sup>  
Jimmy! Jimmy!

<sup>125</sup>  
Look, Sally, look.

<sup>115</sup>  
Boys, we will go in.

Nouns in the address function sometimes look like appositives if preceded or followed by a pronoun.

<sup>115</sup> <sup>131</sup>  
John, you are to stay here.

<sup>131</sup> <sup>115</sup>  
You, John, are to stay here.

- 1\_6 noun in prepositional phrase. This function is that of object or head noun in a phrasal unit begun by function words called phrase markers (prepositions). Or, the noun may be in an adverbial phrase consisting of noun marker or adverbial noun modifier with the

phrase marker deleted from the surface structure.

<sup>411 560 560 510 116</sup>  
He fell down out of the tree.

<sup>560 156 156 156</sup>  
The shallow basin of Salt Creek Wash became a gathering  
<sup>560 116 560 116</sup>  
pool of darkness where a band of eight hundred sheep  
<sup>560 116 530 560 116</sup>  
with their lambs were bedding down for night.

<sup>560</sup>  
She sniffed the cool air of the late spring drifting down  
<sup>116</sup>  
the wash.

<sup>560 176</sup>  
At first the flowers failed to bloom.

<sup>560 176</sup>  
At last the war was ended.

<sup>560 176</sup>  
The call was returned at once.

<sup>510 116</sup>  
(On, During) That night the storm hit.

<sup>382 116</sup>  
(On, During) Last night he completed the task.

<sup>372 116</sup>  
(On, During) Tomorrow night...

<sup>510 116</sup>  
(On, During) One day... (Here, one is not a quantifier, but  
is comparable to that or the.)

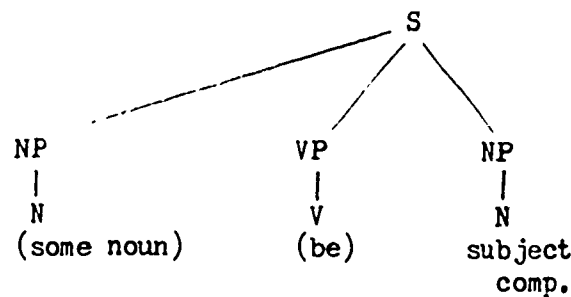
<sup>510 116</sup>  
(On, During) Some day...

<sup>116</sup>  
She had eaten mutton (during) many times.

Note:

It is possible to have a compound phrase marker or a compound verb particle, but not a compound proadverb.

1.7 subject complement. This function might also be labeled predicate noun. The noun foll 's a form of the verb be or become, remain or stay (special cases of copulative verbs). Generally, the subject complement can be regarded as an equivalent statement and can be interchanged with the subject.



<sup>131</sup>                      <sup>117</sup>  
 He remained a blacksmith all his life.

<sup>131</sup>                      <sup>117</sup>  
 They would become easy prey to the coyotes.

<sup>131</sup>                      <sup>117</sup>  
 It was a house of fine architectural design.

<sup>131</sup>                      <sup>127</sup>  
 He was Mr Big in the industry.

Function word place holders must be distinguished from the subject of the sentence in determining subject complements.

<sup>511</sup>                      <sup>570</sup>                      <sup>171</sup>  
 There was nothing more to eat.

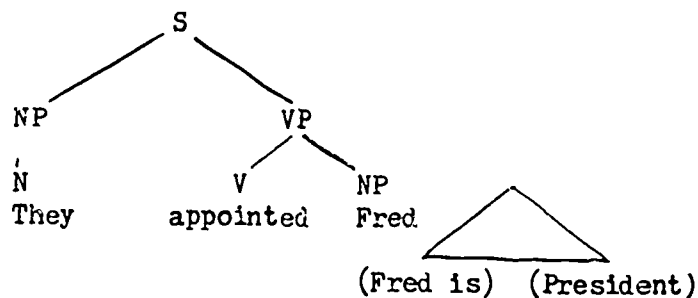
<sup>511</sup>                      <sup>111</sup>  
 It was raining.

Notes:

Forms of be can be substituted for become, remain and stay when they are followed by a subject complement.

1\_8 object complement. This function co-occurs with and is an equivalent statement for the direct object. Transitive verbs such as name, elect, appoint, make often are followed by object complements. The surface structure is a result of embedding and deleting.

They appointed Fred.  
 Fred is President.  
 They appointed Fred President.



The object complement can generally be preceded by to be.

<sup>122</sup>                      <sup>118</sup>  
 They appointed Fred (to be) President.



<sup>122</sup> They elected Don (to be) <sup>118</sup> senator.

<sup>131</sup> They named him (to be) <sup>128</sup> Don.

Cross reference: appositive 1-5, address 1-5, subject complement 1-7, transitive verb 22-, direct object 1-2.

1\_9 noun in a phrase of intensification. The intensifier function qualifies or indicates degree with respect to adverbials and adjectives.

<sup>570</sup> He is <sup>422</sup> very happy.

<sup>570</sup> He lives <sup>560</sup> far <sup>116</sup> down the river.

The two examples above are function word intensifiers. Nouns can serve a similar kind of function.

We're <sup>119</sup> two days <sup>560</sup> out from the <sup>560</sup> corrals and <sup>116</sup> a day <sup>119</sup> late <sup>423</sup> on the drive.

A coyote emerged from the edge of the sage not <sup>119</sup> fifty <sup>421</sup> feet away.

A star is many <sup>119</sup> many <sup>311</sup> times bigger than you are.

<sup>570</sup> All <sup>119</sup> night <sup>423</sup> long she cried.

Cross reference: intensifier, adverb.

## 2\_ \_ Verb Category

### Verb Filler

#### 20\_ indeterminate

21\_ "be" form. This includes forms of be used as the main verb in a sentence, but does not include forms of be used as (auxiliary) verb markers. Some sentences contain both uses of be.

<sup>520</sup> He is <sup>211</sup> being helpful.

<sup>211</sup> Sally was the victor.

Cross reference: function word.

22\_ transitive verb. These verbs can be followed by one or two NP's. Generally, transitive verbs are characterized as (1) those head verbs whose VP's have in their surface structures NP's immediately dominated by the VP, (2) the NP's can not be included in a prepositional phrase and retain their positions in the phrase structure, (3) verbs which can undergo the passive transformation.

However, this definition must be augmented by noting:

- 1) The direct object NP can be eliminated from the surface structure.

He pays (to) him (something).  
He asks (of) him (something).  
He promises (to) him (something).  
He sold (to) him (a bill of goods).  
He smokes (something).  
He sings (something).  
He plays (something).

- 2) Some transitive verbs can not undergo the passive transformation. Gleason calls these pseudotransitive, Owen Thomas calls them middle verbs.

It cost ten dollars.

The trip took two days.

Cross reference: indirect object, direct object, verb markers.

- 23\_ intransitive verb. These verbs do not have a passive form and have adverbial or adjectival phrases in the VP rather than NP's functioning as direct and indirect objects.

<sup>23/</sup>  
He was working hard.

<sup>23/</sup>  
She sat very still in her chair.

The category includes verbs such as seem, remain, stay and become which can be replaced by a form of be.

<sup>23/</sup> He became frightened. <sup>2//</sup> He was frightened.

<sup>23/</sup> He remained at home. <sup>2//</sup> He was at home.

<sup>23/</sup> He seems talented. <sup>2//</sup> He is talented.

Some verb forms traditionally labeled gerunds are coded as verbs.

<sup>23/</sup> <sup>23/</sup>  
They sat talking on the fence.

<sup>23/</sup> <sup>23/</sup>  
He went fishing in the river.

<sup>23/</sup> <sup>23/</sup>  
He came running down the road.

<sup>23/</sup> <sup>23/</sup>  
He went hunting in the woods.

The sentences can be restated as:

They sat and (they) talked on the fence.

They went and (they) fished in the river.

He came (down the road) (and he was) running down the road.

He went (in the woods) (and he was) hunting in the woods.

Subject complements can be distinguished from verbs by attempting to insert an intensifier.

He was (very) <sup>33/</sup>interesting.

He was (very) <sup>31/</sup>capable.

They seemed (very) <sup>33/</sup>ashamed.

Cross references: verb marker, noun modifier.

24\_ infinitive. A sequence of the verb particle to + verb generally signals the presence of the infinitive form of the verb:

He wanted <sup>530 520 24/</sup>it to be done.

He wanted <sup>530 24/</sup>to do it.

In some sentences, the element to is omitted from the surface structure:

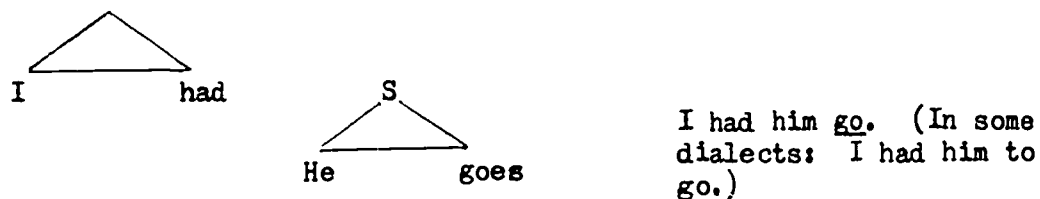
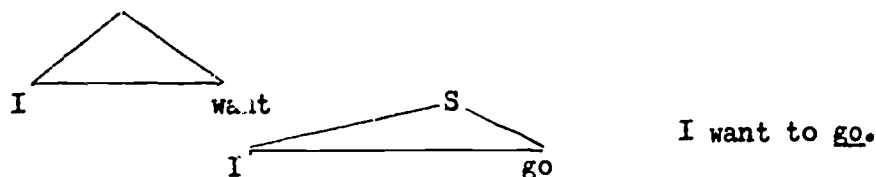
He had him <sup>24/</sup>come. (He had him <sup>530 24/</sup>to come.)

Let him <sup>24/</sup>go. (Allow him to go.)

Let <sup>24/</sup>go of it. ((You) let it to go.)

See Spot <sup>24/</sup>run ( See Spot to run.)

An infinitive form represents a deep structure clause:





The passive transformation involves (1) the inversion of the first NP in a sentence with one of the other NP's immediately dominated by the VP, (2) the inclusion of be or get prior to the verb markers and or main verb, and (3) the inclusion of by + NP, at the end of the clause.

Passive verb forms can be identified in the surface structure by the presence of be or get as verb markers along with the agentive VP phrase begun with by + (some noun or noun phrase). Often the by or agentive phrase is missing from the surface structure.

The girl was kissed (by someone).  
The girl got kissed (by someone).

Note:

Most transitive verbs but no intransitive verbs function in the passive voice.

2\_3 imperative. The imperative most often is incompletely characterized as the presence of the main verb at the beginning of a clause and the absence of a subject NP in the surface structure. Traditional grammar characterizes the imperative verb form as having as a deleted subject - you - which is "understood." The tag question transformation lends validity to the idea that you is the subject.

<sup>213</sup>  
Check the parking meter.

can be transformed to:

<sup>223</sup>  
Check the parking meter, will you.

<sup>223</sup>  
You will check the parking meter.

<sup>223</sup>  
You check the parking meter.

The imperative is characterized by a syntactic context including (1) a second person pronoun for a subject which may or may not be in the surface structure, (2) will as the one and only auxiliary which is present in the surface structure when the pronoun subject is present, and (3) the present tense.

<sup>213</sup>  
Be on time.

<sup>213</sup>  
If you can, come at six.

<sup>223 530</sup>  
Look at that car!

2\_4 subjunctive. Conditional status is indicated by the subjunctive verb. It is marked by a dependent clause begun with if and the subjunctive verb forms be or were.

The subjunctive is becoming archaic in speech though it is present in writing.

<sup>214</sup>  
If he be king...

<sup>214</sup>  
If I were you...

<sup>234</sup>  
If Nixon were elected...

### 3\_ Noun Modifier Category

#### Noun Modifier Filler

#### 3\_0 indeterminate

31\_ adjective. An adjective qualifies a noun. The test for adjectives is:

The <sup>111</sup> \_\_\_\_\_ is <sup>311</sup> \_\_\_\_\_.

The new wagon arrived.      The lively kitten played with twine.

<sup>111</sup>      <sup>311</sup>      <sup>111</sup>      <sup>311</sup>  
The wagon is new.      The kitten is lively.

Some adjectives can be easily confused with proper noun and noun adjunct:

<sup>312</sup>  
The oak trees are beautiful.

<sup>311</sup>  
The trees are oak.

<sup>117</sup>  
The trees are oaks.

<sup>187</sup>  
The tree is an oak. (tree)

<sup>312</sup>  
The Cherokee boy arrived.

<sup>131</sup>      <sup>311</sup>  
He is Cherokee.

<sup>127</sup>  
He is a Cherokee.

<sup>127</sup>  
They are Cherokees.

<sup>312</sup>  
The American boy arrived.

<sup>127</sup>  
The boys are Americans.

<sup>111</sup>      <sup>311</sup>  
The boy is American

<sup>127</sup>  
The boy is an American.

<sup>311</sup>  
The boys are American.

32\_ noun adjunct. A noun adjunct is a noun functioning in an adjective position.

circus tent criminal lawyer ice-cream man fire hydrant

A noun adjunct must fit one of the following tests.

1) It may be transformed to the noun in a prepositional phrase.

the tent for the circus  
the lawyer for criminals  
the hydrant for the fire department.

2) It may be the direct object of an embedded, deleted sentence.

the man (the man sells ice-cream)  
the man (who sells ice-cream)  
the ice-cream man.

3) It may be the subject complement of an embedded, deleted sentence.

the teacher (the teacher is a student)  
the teacher (who is a student)  
the student teacher.

33\_ verb derived modifier. This includes verbs which are placed in a modifying position prior to a noun.

<sup>332</sup>  
The painted fence is new.

Running water is available.

The test for verb derived modifiers:

The <sup>1-1</sup> \_\_\_\_\_ is <sup>2--</sup> \_\_\_\_\_.  
noun verb

<sup>222</sup>  
The fence is painted (by me).

<sup>231</sup>  
The water is running.

34\_ possessive noun

35\_ possessive pronoun. These are nouns and pronouns of the following sort:

<sup>342</sup>  
Mr. Green's car arrived.

<sup>352</sup>  
His car was green.

Some pronouns have two possessive forms - one to use in embedded position and the other as subject complement or noun substitute.

Embedded: <sup>352</sup> Her car arrived.  
Subject complement: <sup>351</sup> The car is hers.  
Noun substitute: <sup>181</sup> Hers is new.

Note:

Embedded possessives have a double function since they replace the noun marker when they are embedded.

The car is green.      The car is <sup>351</sup> his.      <sup>352</sup> His car is green.

We choose to classify possessives as noun modifiers only since handling both functions carries our analysis to another level of complexity.

36\_ titles. Titles occur with proper nouns.

Mr., Mrs. }  
Grandfather }  
Grandmother }  
Uncle, Aunt }  
Doctor }  
General }  
President }  
King, Queen } +proper noun

Some of these items may exist by themselves with no proper noun or phrasal unit attached. If so, they are coded as proper nouns.

<sup>12-</sup>  
The President of the United States  
<sup>362</sup> <sup>12-</sup>  
King George  
<sup>362</sup> <sup>12-</sup>  
Grandfather Eastman

Cross reference: nominal phrasal unit, proper noun

37\_ adverbial. Adverbs which are placed in a modifying position prior to a noun. These modifiers qualify nouns with respect to time and place and seem to be remnants of embedded adverbial phrases.

<sup>372</sup>  
tomorrow night...  
(the night of tomorrow...)  
<sup>372</sup>  
yesterday morning...  
(the morning of yesterday...)  
<sup>37-</sup>  
front yard...  
(the yard in the front...)



<sup>37-</sup>  
side lot...  
(the lot at the side...)

<sup>37-</sup>  
top floor...  
(the floor at the top...)

Cross reference: noun modifier, ordinal number, adjective.

38\_ ordinal number. This grouping indicates sequence.

<sup>382 121</sup>  
Next Monday is the parade.

<sup>382 116</sup>  
He went home last week.

<sup>382 111</sup>  
The third game was lost.

39\_ phrasal unit. This includes both hyphenated and unhyphenated noun phrasal units placed in a modifying position prior to a noun. The unit, not each word, is the modifier.

<sup>392 392</sup>  
the dining room table

<sup>392 392</sup>  
an internal combustion engine

<sup>392</sup>  
a mother-in-law phobia

#### Noun Modifier Function

3\_1 subject complement. This function might also be labeled predicate adjective. The noun modifier follows a form of be or of become, remain, stay, or feel for which some form of be can be substituted.

<sup>371</sup>  
He was late

<sup>311</sup>  
He is young.

<sup>311</sup>  
He remained alert.  
(He was alert.)

<sup>311</sup>  
He stays awake.  
(He is awake.)

<sup>311</sup>  
They felt happy.  
(They were happy.)

Sometimes a subject complement begins a sentence and is the only remaining element of a deep structure sentence:

<sup>311</sup>  
Desperate, he ducked into a dark passageway.

<sup>311</sup>  
(He was) desperate, (and) he ducked into a dark passageway.

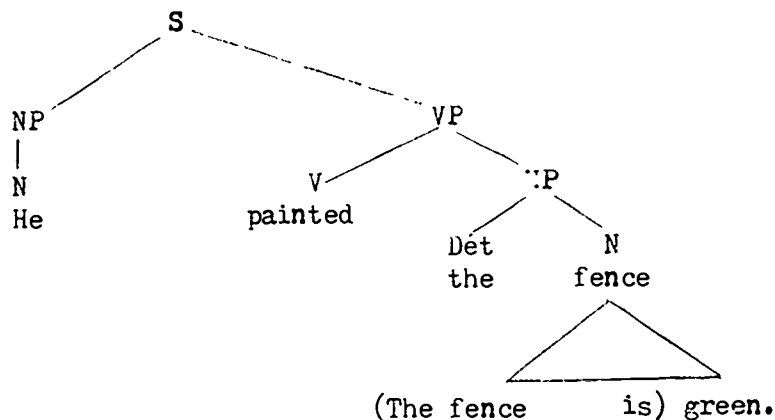
3\_2 embedded. Noun modifiers which precede the element modified are surface structure representations of embedded clauses.

312 312 11-  
 the new red wagon...  
 (the wagon is new)  
 (the wagon is red)

382 392 392 11-  
 the first dog catcher truck...  
 (the truck is the first)  
 (the truck is for the dog catcher)

312 362 12-  
 little Miss Muffet...  
 (Muffet is little)  
 (Muffet is a Miss)

3\_3 object complement. In sentences such as He painted the fence green., the noun modifier, green, is the remains of an embedded clause. It modifies the head noun in a noun phrase immediately dominated by the verb phrase.



4\_ \_ Verb Modifier

Verb Modifier Filler

40\_ indeterminate

41\_ proadverb. A proadverb functions much as do proverbs and the elements traditionally labeled pronouns. A proadverb stands for an entire adverbial phrase which is not present in the surface structure. Proadverbs include: (1) the first element of a compound phrase marker; (2) the phrase marker without a following noun phrase.

411  
 He went back.  
 (He went back to someplace).

411  
 He ran out.  
 (He ran out of someplace).



preposition left in the surface structure and noun deleted.

He waited <sup>411</sup>outside (the door).

Or nouns as verb modifiers with prepositions deleted.

He went <sup>431</sup>(to) home. He went <sup>431</sup>(to) there.

4\_2 manner. Verb modifiers will indicate how the verb operates.

He ran <sup>422</sup>rapidly.

4\_3 time. Verb modifiers will indicate when (or for how long) the verb operates.

Please come <sup>423</sup>now.

Adverbials of time will often be prepositional phrases or transformed phrases that result in nouns remaining after preposition deletions.

He came <sup>433</sup>(on) yesterday. (On) <sup>433</sup>Monday he went home.

It lasted <sup>433</sup>(for) weeks.

4\_4 reason. Adverbials of reason add reason to the verbs operation. They are generally prepositional phrases.

He did it <sup>424</sup>purposely.

4\_5 other. A small collection including too, also, etc.

Note:

All words in prepositional phrases are separately coded regardless of the function of the whole phrase.

I'm going <sup>126</sup>on next Monday.

When only the preposition is deleted the coding remains the same.

I'm going <sup>126</sup>next Monday.

But when only the noun remains then it is coded as a verb modifier.

I'm going <sup>133</sup>Monday.

5\_ \_ Function Word Category

Function Word Filler

50\_ indeterminate

- 51\_ noun marker. Words which signal the presence of nouns and which have little concrete or abstract meaning are noun markers.

One day...  
Some day...

That, this, these, those, the, followed by a noun are noun markers.

Noun markers - with the exception of the and a - can also function as pronouns.

Cross reference: pronoun, quantifier.

- 52\_ verb marker. These include auxiliary verbs in the verb phrase. The modals, have and be can be verb markers when the main verb is included in the surface structure.

<sup>520</sup>    <sup>520</sup>  
He should have come.

<sup>520</sup>  
He is coming.

Do is also a verb marker when the main verb is present in the surface structure.

<sup>520</sup>  
He did arrive late.

<sup>520</sup>  
Did he get home?

Verb markers can occur in multiple sequences:

<sup>520</sup>    <sup>520</sup>  
He should have been here.

<sup>520</sup>    <sup>520</sup>    <sup>530</sup>    <sup>520</sup>    <sup>530</sup>    <sup>240</sup>  
Jane is going to have to go to Paris.

<sup>520</sup>    <sup>520</sup>    <sup>530</sup>    <sup>241</sup>  
Tom will have to mow the lawn.

There are verb markers which seem to indicate duration of time: keep + on, go + on, went + on, stop, continue.

<sup>520</sup>    <sup>530</sup>  
He went on walking.

<sup>520</sup>  
He kept (on) walking.

Other examples which might be noted.

<sup>520</sup>  
He ought to do it.

<sup>520</sup>  
He must do it.

<sup>520</sup>  
He has to do it.

Going is often used as a tense marker. In speech, going is the future tense marker more often than is will or shall.

<sup>520</sup>  
I'm going to go.

<sup>520</sup>  
I will go.  
(I shall go).

Get and its alternate forms can also be verb markers.

<sup>520</sup>  
He got going.

<sup>520</sup>  
She gets started early.

They are particularly common as passive markers.

<sup>520</sup>  
He got hit by the ball.

<sup>520</sup>  
She gets kissed often (by men).

Cross reference: verbs, transitive and intransitive.

- 53\_ verb particle. Verb particles are words that can look like prepositions or adverbs but which are essential to the full meaning of the verb. For example, in the sentence He turned off the light. The separable element off is essential to the meaning of the verb turn. If off is left out of the sentence, the meaning is significantly changed: He turned the light.

There are a sequence of tests which can be used to judge verb particles.

#### Semantic

- 1) A synonym seems to be a possible equivalent for the two word verbal.

He turned the lights off.  
(He extinguished the lights.)

- 2) The particle seems to go with the main verb and, in fact, seems essential to its meaning.

#### Syntactic

- 1) Are the verb and following element separable?

He turned off the lights.  
He turned the lights off.

He put up his bike.  
He put his bike up.

Note:

When a pronoun is present, a noun needs to be substituted:

He put it up.  
\*He put up it (the bike).

- 2) If the particle and main verb are not separable can the sentence be transformed into a semantically similar and acceptable how or where question without the use of the particle? For example:

particle  
needed

{ The car (ran into ) the store.  
(hit, struck)  
What did the car run into?  
Answer: the store.

prepositional  
phrase not  
necessary to  
form question

{ The boy (ran into) the store.  
(entered)  
Where did the boy run?  
Answer: into the store.

- 3) Can the main verb and particle be transformed into a passive sentence?

He was watching for the police.

(The police were being watched for by him.)

But the same words can have a different deep structure

He was watching for the police.

(The police asked him to watch something.)

No passive possible.

- 4) Does the main verb have a latinate prefix which duplicates the meaning of the separate element?

He departed from...      He contracted with...  
He entered into...      She dispensed with...

Notice that the syntactic question has been whether the NP dominated by the VP is the object of the verb (including particle) or the object of a preposition.

Problems arise in both the semantic and syntactic realms when one

attempts to identify a category of separable verbs exclusive of large numbers of exceptions and special cases.

The to marking infinitive verb forms is coded as a verb particle.

<sup>530 241</sup>  
Tom will have to mow the lawn.

<sup>530 241</sup>  
"I was only washing the doll to make it look like new,"  
Freddie explained.

54\_ question marker. Question patterns are generally indicated in two ways: (1) the inversion of auxiliary + tense and the noun phrase; (2) the inclusion of one of a group of question words at the beginning of the sentence. These question words include: what, when, which, why, where, how.

<sup>540</sup>  
Which chair is ready to ship?

<sup>540</sup>  
How do you play chess?

But notice that when a question is embedded in a larger structure and functions as a dependent clause, the question marker function is superceded by the clause marker function.

<sup>550</sup>  
Do you know which chair is ready to ship?

<sup>550</sup>  
Does anyone know how you turn on the air conditioner?  
(In some dialects this would be: Anybody know <sup>550</sup> how do you turn on the air conditioner?)

<sup>550</sup>  
Do you know why he is leaving the company?

55\_ clause marker. Clause markers begin dependent clauses and join them to the independent clauses.

<sup>550 510 111 211 311</sup>  
He knew that the car was new.

<sup>550</sup>  
The news that the plane was late wasn't startling

<sup>550</sup>  
The play which John wrote was performed.

<sup>550</sup>  
Ted is bigger than John. (is big)

<sup>550</sup>  
He ran as fast as he could.

<sup>550</sup>  
After the show (was over), the boys went to the drive-in.

In the above examples 4, 5, and 6 the verb phrase of the relative clause is incomplete or absent.

Examples 5 and 6 show that words traditionally labeled prepositions can also be clause markers.



In example 6 the verb phrase is missing completely from the surface structure.

- 56\_ phrase marker. These are words which introduce an adverbial or other prepositional phrase. These may occur in a series.

His home is <sup>560</sup> by the expressway.

The hat <sup>560</sup> on his head <sup>560</sup> fell over his eyes.

Sam ran <sup>560</sup> down the road.

Ted fell <sup>560</sup> down out of the tree. (In some dialects: Ted fell down out the tree.)

I'm going <sup>560</sup> over to Judy's

Cross reference: proadverb, verb particle, adverb, adverb particle, clause marker.

- 57\_ intensifier. Intensifiers indicate amount or degree with respect to adjectives and adverbs. Adjectives and adverbs are intensified; noun forms are quantified. They can modify either single words or phrases.

<sup>570</sup> <sup>420</sup>  
Very well.

He is <sup>570</sup> indeed <sup>311</sup> clever.

The doctor moved <sup>570</sup> very <sup>422</sup> quickly.

The bottle was <sup>570</sup> almost <sup>311</sup> full.

<sup>570</sup> half  
<sup>570</sup> quite

<sup>570</sup> <sup>560</sup> <sup>570</sup> <sup>116</sup>  
Precisely } barely at that moment, he arrived.

<sup>570</sup>  
Right

<sup>570</sup> <sup>423</sup>  
Just then, he arrived.

He was <sup>570</sup> very <sup>331</sup> tired.

Put it <sup>570</sup> right <sup>560</sup> <sup>186</sup> <sup>560</sup> <sup>136</sup> on top of this.

John was <sup>570</sup> hardly <sup>311</sup> happy.

<sup>570</sup>  
completely

Intensifiers may occur in two word sequences.

<sup>570</sup> <sup>570</sup> <sup>423</sup>  
All too soon it was time to go.

A ladybug is <sup>570</sup> very, <sup>570</sup> very <sup>311</sup> small.

Cross reference: noun in intensification, quantifiers.

58\_ conjunction. Words which conjoin clauses or phrases or elements within clauses or phrases are conjunctions. Only parallel and equal elements may be conjoined.

570  
John and Sue arrived.

570 580  
He wanted neither red nor white.

580  
The dish is broken, therefore, she'll buy another.

580 580  
He knew what to do and so he began.

59\_ negative. Both no and not are included in this category. When not occurs in a contraction, it is coded as part of the contraction (see contractions).

510\_ quantifier. Nouns are quantified, adjectives and adverbs are intensified.

5(10)0  
What fun this is.

5(10)0  
Few people came.

5(10)0 510 119 311  
The water is half a foot deep.

5(10)0 119 371  
They are three days late.

Negative quantifiers include:

5(10)0  
He is scarcely an athlete.

590 5(10)0  
not exactly

5(10)0  
hardly

511\_ other. This category contains special instances of it and there.

5(11)0  
It is raining.

5(11)0  
There is a good restaurant in the Union.

Here is included when its "place" reference is diminished from a specific in this place to a general, idiomatic usage.

5(11)0  
Here you are.

5(11)0  
Here is my idea.

5(11)0  
Now see here.

Yes is included in this category. Actually yes is a special case. Rather than create a separate category for this one word, it is included here.

512\_ adverb particle. These elements may look like prepositions, but do not mark the beginning of a phrase; rather, they are pattern completers which add little to meaning.

<sup>~25 5(12)0</sup>  
He is better off.

<sup>423 5(12)0</sup>  
We'll discuss it later on.

<sup>423 5(12)0</sup>  
Earlier on they'd discussed it.

<sup>425 5(12)0</sup>  
Right on!

## 6\_ \_ Indeterminate Category

### Indeterminate Filler

60\_ indeterminate

61\_ interjection

Hell! Oh! Well! Indeed! Gracious! Damn! (in the nominal sense of damnation)

62\_ words out of syntactic context. When an isolated word or a list of words occurs inside quotation marks, then the word is coded as lacking its usual syntactic contexts. Included, too, are full mailing addresses and signs.

<sup>620</sup>  
"Philosophical" he said.

<sup>620 620 620</sup>  
"Savage: wild, not tamed.

<sup>620 620 620 620</sup>  
Sinewy: stringy, strong or powerful."

<sup>620 620 620</sup>  
Mr. J. Johns

<sup>620 620 620</sup>  
224 Park Street

<sup>620 620 620 620</sup>  
New York, New York

### Note:

Numbers and alphabetic initials are not coded, since they involve another system and do not elicit any single, correct, expected response.

<sup>116 600</sup>  
He lives in apartment 3A.

<sup>116 600</sup>  
He ran toward number 749.

63\_ defies classification/ambiguous. This category is used in the rare case that some tentative assignment to another category can not be made.

64\_ greetings. This category includes all one word greetings and two word greetings such as good morning.

Greetings such as How do you do are treated literally.

7\_ Contraction Category. This category allows us to code each part of either an ER or OR contraction.

Left Part of Contraction

71\_ pronoun. All words coded as pronouns which appear as left parts of contractions.

711  
He's coming.

712  
That's mine.

72\_ verb marker. All words coded as verb markers which appear as left parts of contractions. be, have and do forms are differentiated from their verb marker counterparts.

724  
He isn't coming.

724  
They don't see us.

73\_ be forms. All be forms in copula position. Note that be forms also appear as right parts of contractions.

734  
He isn't here.

734  
They aren't happy.

74\_ let. This verb only appears with the pronoun us.

745  
Let's go.

75\_ question marker/clause marker. All words which are normally coded question or clause markers.

752  
What's his name?

751  
How've you been?

751  
Where're we going?

751  
The house that's falling down.

751  
That's the boy who's crying?

76\_ it/there/here. These three words are coded here, when they would

normally be coded 11-other under function word if they appeared separately.

<sup>762</sup>  
Here's a job for you.

<sup>761</sup>  
It's raining.

<sup>761</sup>  
There'll be a hot time tonight.

77\_ adverb. Words such as here and there used as adverbs.

<sup>772</sup>  
Here's mine.

<sup>772</sup>  
There's the man.

78\_ noun. All words (other than pronouns) coded as nouns.

<sup>781</sup>  
Tom's leaving.

<sup>781</sup>  
Mary'll come too.

<sup>782</sup>  
Bob's happy now.

79\_ transitive verb (have). Forms of have may appear as transitive verbs in left parts. Rarely, they also appear in right parts (see 7\_3).

<sup>794</sup>  
He hasn't any money.

<sup>794</sup>  
They haven't any food.

Note:

Avoid confusing has forms used as verb markers.

<sup>724</sup>  
He hasn't left yet.

#### Right Part of Contraction

A smaller number of possibilities may be right parts of contractions. One example is given with each possible left part. Obviously many combinations are not possible in English.

7\_1 verb marker. All words normally coded verb markers which occur as right parts.

<sup>711</sup>  
He's coming.

<sup>761</sup>  
It's raining.

<sup>781</sup>  
Mary's got it.

<sup>751</sup>  
He is the one who'll try.

7\_2 be forms. In copula position as right part.

712  
It's here.  
752  
Who's home?  
772  
Here's the place.  
782  
Mary's home now.

7\_3 have (transitive verb). Rarely, forms of have may occur in American English as right parts.

713  
They've a new car.

7\_4 negative. Always appears as n't.

724  
They aren't coming.  
734  
They aren't here.  
744  
They haven't any.

7\_5 pronoun (us) Some pronouns appear to be contracted, such as him and them, but are not written as contractions. They are not normally counted as miscues.

745  
Let's go.

Additional Notes:

#### Idioms

Idioms are treated literally, e.g.:

221 510 112 560 510 116  
She's had a heck of a time.

This procedure is followed despite the probability that idioms exist as single lexical entries in deep structure.

#### Partial Sentences

Syntactic structures preceding and following the sentence fragment are reviewed, and grammatical functions assigned in accordance with prior and subsequent occurrences, e.g.:

421  
I want to go outside.  
421  
Outside! It's too cold out there.

18 OR IN VISUAL PERIPHERY

The possibility exists that any substitution or insertion miscue which a reader makes has been partially cued by an item in the reader's visual peripheral field; that as the reader scans the text what he reads can be influenced by text items in the periphery of his vision.

This category is limited to word level substitution and insertion miscues and to consideration of the five text lines immediately surrounding the miscue.

Mother looked at Freddie.  
 She said, "You are too little  
 to help Father and Jack. } near  
 You are not too little to help me. }  
 Here is something you can do." } extended

Blank This category is inappropriate. An omission, non-word substitution, or phrase level miscue is involved.

0 The visual periphery is not involved in the miscue. The OR item can not be found within the surrounding five lines of text.

Mother looked at Freddie.  
 She said, "You are too little  
 to help Father and Jack.  
 You are not too little to help me.  
 Here is something you can do."

1 The OR can be found in the near visual periphery. The OR can be found in the text within the three lines surrounding the miscue.

Mother looked at Freddie.  
 She said, "You are too little  
 to help Father and Jack. } near  
 You are not too little to help me. }  
 Here is something you can do." }

2 The OR can be found in the extended visual periphery. The OR can be found in the text within the second line before or after the line containing the miscue.

Mother looked at Freddie.  
 She said, "You are too little  
 to help Father and Jack. } extended  
 You are not too little to help me. }  
 Here is something you can do." }

9 It is doubtful whether the visual periphery was involved in the miscue. The OR can be found within the visual periphery but there is an unusual amount of intervening space caused either by paragraphing or the use of double columns of print.

## APPENDIX E

### DEVELOPING A COMPREHENSION RATING

Each subject is asked, immediately following the reading, to retell in his own words what he has read. This retelling can be aided by some general questioning on the part of the researcher (see "procedure" under Taping the Reader).

#### Guide Questions to Aid Story Re-telling

1. Now, would you tell me everything you remember about the story you just read.

Do not interrupt or interject any questions until the child has completed his re-telling. Keep in mind the Story Comprehension form. Then, ask any of the following kinds of questions to elicit responses in areas the child either failed to cover or was ambiguous about.

2. Can you think of anything else that happened? (events)
3. Who else was in the story? (character recall) Tell me about them.
4. What happened that's funny, exciting or sad in the story? (subtleties)
5. What do you think the story was telling you? (theme)
6. Where did the story take place? (setting)
7. Tell me more about (key character) (character development)
8. Tell me why (key event) happened. (plot)

#### Additional Instructions

1. If the child seems to grope for words or stops, the researcher may pick up a question or comment from the child's final statement to encourage further response.
2. Inserting questions such as, "What happened next?", "How did that happen?", etc. may also encourage further response.
3. If the child's response has left it unclear as to whether or not he knows the plot, etc., then additional specific questions are in order. The unique organization of some stories might necessitate preparing such questions prior to the taping.



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Here is something you can do."

Blank This category is inappropriate. An omission, non-word substitution, or phrase level miscue is involved.

0 The visual periphery is not involved in the miscue. The OR item can not be found within the surrounding five lines of text.

Mother looked at Freddie.  
She said, "You are too little  
to help <sup>work</sup> Father and Jack.  
You are not too little to help me.  
Here is something you can do."

1 The OR can be found in the near visual periphery. The OR can be found in the text within the three lines surrounding the miscue.

Mother looked at Freddie.  
She said, "You are too little  
to help Father and Jack. } near  
You are not too little to help me. }  
Here is something you can do."

2 The OR can be found in the extended visual periphery. The OR can be found in the text within the second line before or after the line containing the miscue.

Mother looked at Freddie.  
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4. When using any of the suggestions provided above; No specific information may be used in a question if the child has not already provided that information.
5. Always check the reader's comprehension of any unusual key words from the text.

A content outline should be developed for each piece of reading material with one hundred points being distributed across the items within each of the categories.

#### Story Outline

Character recall (list characters)	15
Character development (modifying statements)	15
Theme	20
Plot	20
Events (list occurrences)	30

#### Information Outline

Major Concept(s)	30
Generalization(s)	30
Specific points or examples	40

The reader's retelling is compared to the outline and points are deducted from the total of one hundred for missing or confused information.